



# SOCIAL AND HEALTH INDICATORS SYSTEM



## Part II: Rural

Mound Bayou, Mississippi



EXECUTIVE OFFICE OF THE PRESIDENT  
Office of Economic Opportunity  
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and Evaluation

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CHAPTER I  
DESCRIPTION AND RATIONALE OF THE PROGRAM

INTRODUCTION

The Social and Health Indicators Program was initially formulated by the Census Use Study of the U.S. Bureau of the Census in an October 1971 proposal submitted to the Office of Economic Opportunity.<sup>1</sup> The initial proposal stipulated that the major focus of the program was to be on a primary site (Los Angeles, California), but that feasibility studies were to be conducted in five other secondary sites (Mound Bayou, Mississippi; Chicago; Providence; Atlanta; and Phoenix). By mid-year 1972 the feasibility studies or Stage I efforts had been completed in the five secondary sites, and Stage I reports were submitted to OEO on each site. At that point the secondary sites were advanced to Stage II, involving actual data collection and analysis. The Stage II procedures for Los Angeles, somewhat more complicated than the other sites, have been implemented; and the results are contained in the Los Angeles Stage II report (April 1973). The present report deals with Stage II processes in Mound Bayou, Mississippi.

Objectives and Structure of the Program

The overall purposes of the indicators program are to construct and maintain a system of social, health and resource indicators that have both spatial and temporal dimensions. This system will provide a mechanism for monitoring or tracking the health status and the social and economic well-being of populations residing in small geographic areas which contain an OEO multi-purpose health center (or in some sites health networks). A major objective of the indicators program is to measure aggregate effects or "impacts" in these communities through time. In other words, the objective is to discern over the long term the extent to which these impacts are related to the program activity of the OEO centers and other programs operating within the health and social service delivery system of the area. An ultimate objective of the program is to provide an on-going monitoring mechanism which will be useful for structuring new programs to fulfill unmet needs, and for re-evaluating and revamping existing health programs and related social services to deal more appropriately with the changing patterns in the areas.

Inputs for the program are data generated by State and county administrative agencies operating within each of the six sites. Although there are slight variations from site to site, the overall program was conceived as a three-stage operation that is to be implemented initially

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1. See proposal "Development of Social and Health Indicators to Profile and Monitor Populations Served by the Office of Economic Opportunity Neighborhood Health Centers and/or Health Networks." October 1971.

in Los Angeles, the primary site, and the five secondary sites mentioned above. In the long term, similarly structured programs are planned to be implemented in additional sites, both urban and rural, throughout the nation.

Each of the three stages is briefly described below:

1. Stage I - Determine Feasibility of Developing the Indicator System. As a prerequisite to developing an indicator system based on local area data, the project staff members have established contacts with agencies that have been generating such data for project sites. The purpose of this activity was to determine whether or not relevant and accurate data were readily available in adequate detail, timeliness and appropriate geographic levels (small area). As part of this (Stage I) operation, assessments were made as to the feasibility of establishing a data series (advancing the program into Stage II). Once feasibility had been determined, a plan was designed to initiate Stage II operations. Generally, Stage I reports did not contain data analyses. Since the Census Use Study had three years of tenure in Los Angeles, Stage I work was not required at that project site. Stage I efforts and reports have been completed for Atlanta, Mound Bayou, Providence, Phoenix, and Chicago.

2. Stage II - Construct and Initially Implement the Indicator System, 1965-1970. Stage II involves reconstructing data on an annual basis from 1970 backwards to 1965. Since the project uses only existing data (summarized or basic), reconstruction of annual data summaries is not possible on all data files for each of the six years in the series. However, an attempt was made to perform a trend analysis on all conceptual areas included in the program.

As an integral part of Stage II implementation, the project staff has obtained and/or developed gross population estimates by service areas for non-Census years which were applied as denominators for indicators.

In addition to social and health indicators, the project obtained "resource data" from published sources, or through special arrangements with State or local agencies. "Resource data" are defined simply as gross inventories of monies, services, manpower and property that either exist in the project sites (brought in or generated internally), or are allocated to the project sites. Monitoring resource indicators over time should reflect the economic level of the area as well as the changes occurring in the economic well-being of the resident population, especially when cross-comparisons between sites are made.

The initial result of Stage II implementation is a detailed statistical report on the findings of the study up to that point. The central focus of the Stage II report is to monitor or track the health status and social and economic well-being of communities served by OEO health programs. As indicated earlier, the emphasis is on discerning aggregate impact on the community without necessarily attributing this impact to existing social intervention programs. One

objective of the Stage II reports is to provide detailed documentation of all procedures so that replication in other sites can be undertaken without unnecessary duplication of efforts.

3. Stage III - Establish Basis for Continuing Operation of the Indicators System at the Local Site. The purpose of Stage III is to establish the monitoring system mechanism as an on-going process. To achieve this end, the structure developed in Stage II (dealing with years 1965-1970) will be extended beyond 1970. This will entail designing and implementing procedures for automating data preparation and data analysis on a yearly basis. This will provide continuous monitoring of changes in the health and the social status of populations in the project sites. The end product of Stage III will be an annual "social report" for each project site.

Initially, the project staff will prepare the first series of reports. Ultimately, the task of preparing the "social reports" will be undertaken by the local OEO project staff or some other appropriate public agency at each site (e.g., Comprehensive Health Planning B-Agencies).

#### PERSPECTIVE, RATIONALE AND REALITY PRINCIPLES

The indicators program can best be placed in its proper perspective if it is viewed as an advancement of the previous research and demonstration programs undertaken by the Health Information System and the research and development staff of the Census Use Study.<sup>2</sup> The major emphasis of the Census Use Study research and demonstration program was the preparation and analysis of data in a small area spatial context within an urban setting. The New Haven Health Information System utilized the tools developed by the Census Use Study (e.g., DIME and ADMATCH programs) to organize and then analyze census data and locally generated data (e.g., vital records, survey data, hospital obstetrical records) by neighborhoods.<sup>3</sup> Involvement in the indicators program necessitated not only adding the dimensions of time (temporal) and a broader subject matter scope, but also required the development of a different methodology to be applied in a rural area. The rural methodology was designed to contain the same essential dimensions as the methodology evolving from the New Haven experience and advancing into the indicators program implementation in urban sites. These dimensions are space (small area), time (temporal), and expanded subject matter areas. In applying these dimensions to a rural setting it becomes necessary to deal with a whole new set of issues, and to formulate a somewhat modified conceptual frame of reference. Dealing with new issues requires adherence to a reality principle whereby we acknowledged that difficult problems should be confronted, since they do not vanish when ignored. Although developing an indicators program with spatial and temporal

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2. See Census Use Study Reports Nos. 7 and 12.

3. Ibid.



dimensions and for the purpose of monitoring populations in a rural area is attended by a great many problems, five central issues need to be explicated. These issues relate to the following components of the program:

1. Spatial analyses
2. Temporal analyses
3. Usage of locally generated data
4. Generalization of the system
5. Evaluation.

### Spatial Analyses

As indicated before, the major thrust of the earlier New Haven Health Information System program was directed to small area analyses. When dealing with a rural area, small area analysis is difficult for one important reason: rural areas are usually typified by a sparse population scattered within a relatively large geographic area. The usual methodology of small area analysis involves the sub-division of a large heterogeneous population into discrete relatively homogeneous parts along some small geographic dimension, in order to perform a minute analysis of the parts rather than the total. In applying this principle to rural areas, the first problem is one of delineating the geography.

Since the OEO multi-purpose health center and hospital located in Mound Bayou, Mississippi, serve the greater part of a whole county (Bolivar), and that county is rather heterogeneous in composition (see Chapter II; we are able to get some handle on the geography in this particular area which is of concern to the present report. Basically, Bolivar County contains both urban populations (residing in places of 2,500 or more) and rural populations (in places less than 2,500 and on the periphery of places). Therefore, this permits several geographic delineations. First, a delineation can be made between the rural and urban population since they are substantially different from one another. A second delineation can be made on the basis of identifiable place. A place is identifiable if it is incorporated, irrespective of size, or is unincorporated but contains a population of at least 1,000 persons. There are 14 places in Bolivar County which are identifiable in such terms. In addition to delineation by rural-urban and by places, there are at least two other delineations that can be made, but unfortunately lack practicality in terms of organization of data. First, there is the Minor Civil Division (MCD) or so-called supervisory districts. The problem with MCD's is that they are used almost exclusively by the U.S. Census Bureau, and have little if any recognition by State and county agencies in Mississippi. The lack of recognition implies a scarcity of data organized by MCD. Another delineation which can be used on specific subject matter areas, but not across all subject matter areas, is the special purpose geographic delineations used by county and State agencies. These

include such areas as school districts, hospital areas, and the West and East Bolivar Districts used by the State Department of Public Welfare. While these delineations provide some small area focus and will be used where appropriate, they tend to be too specialized to serve as the underlying geographic delineation for the program.

Despite the capability of obtaining a small area geographic focus on a number of subject matter areas, in many situations (as stipulated later in this chapter), the smallest area for which data were available in any depth was the county level. Additionally, we should note that our ability to delineate small areas geographically in Bolivar County, Mississippi does not completely resolve the issue for all rural areas in the nation. Bolivar County is sufficiently heterogeneous to provide a basis for small area delineations. However, the typical rural area may tend to be more sparsely populated, with that population scattered over a large geographic area. In such a situation, the smallest area for which data can be obtained could be the county level. An example of this situation is Lowndes County, Alabama, which the indicators project will handle in the next round. Lowndes County has a relatively small population -- approximately 17,000 persons -- and only two identifiable places also with small populations. The remaining population is scattered over a large geographic area.

### Temporal Analysis

The temporal issue has always been of concern to the Census Use Study. Nevertheless, until we became involved with the OEO indicators program, work on the temporal dimension was subordinated to the spatial dimension, because of the many inherent and perplexing problems associated with the latter. However complicated the problems with spatial analysis, the problems with temporal analysis are even more intractable.

In general, but not necessarily for the Mound Bayou State II project, the most difficult problem associated with temporal analysis is the so-called "denominator problem". Essentially, when one is performing a trend analysis, data must be transformed into rates, ratios, proportions or into other statistical indicators for a number of discrete time periods. These statistics are then compared over time, either qualitatively or quantitatively, to discern trends and changes. Except where numerators and denominators can be obtained from one source (e.g., births) to derive a statistic that has meaning, a numerator (e.g., incidence of venereal diseases) must be related to a denominator (the population at risk). The real question that arises is, "Where does one obtain 'the population at risk' denominator?" There is only one obvious source for population denominators, and that is the body of data generated for a decennial Census. However, these denominators only apply to Census years. For non-Census years, there appear to be only two alternatives: either to survey the entire population annually to obtain basic population characteristics, or apply estimated population denominators for non-Census years. Since annual population surveys are beyond the scope of the present program, we are left with the option of applying population

estimates. In fact, for urban sites we have instituted a program to develop our own population estimating models.<sup>4</sup> As of this time, however, we have not undertaken population estimating model development in rural areas; although this is possible as the program develops further, and we become more involved in rural areas. The basic procedure used for the Mound Bayou project is to apply the population estimates for counties prepared by Dr. Ellen Bryant, Mississippi State University.<sup>5</sup> When a population denominator for place is required, the procedure adopted was to "straight line" population counts for 1960 to equal the population counts for 1970. This procedure implies that the change between 1960 and 1970 was linear and therefore it lacks precision. However, with the exception of larger towns, most places in Bolivar County experienced little absolute increase or decrease in population over the ten-year period; although, in relative terms, because of the small population base, the increase appears to be more substantial than it really is. The static population change (in absolute numbers) distributed linearly over a ten-year period of time, would tend to mitigate bias resulting from this kind of estimating procedure. (See Table I-3,)

#### Usage of Locally Generated Data

A third central issue of this project is the great deal of emphasis placed on utilizing numerator data generated by State and county agencies to support their programs. We believe this approach is an essential one, because of the lack of alternatives, except for frequently conducted censuses or special-purpose surveys. Census data are available only decennially, and therefore can not serve as numerator data for an indicator program containing a temporal dimension. Moreover, Census data lack depth with respect to the many subject matter areas of concern to the project. While frequent censuses would meet many of the needs for profiling populations on social and socio-economic characteristics, they, unfortunately, would fall far short of providing essential data on health, the delivery and utilization of health and social resources, and other kinds of subject-matter concerns that must be dealt with in any comprehensive indicators system. Special-purpose surveys conducted on a continuous sample would provide one mechanism for obtaining numerator data for an indicator system. The requirement, however, would be a relatively high sampling rate to obtain sub-county data and a relatively extensive questionnaire adequately covering the issues involved in the numerous subject-matter areas to be included in a comprehensive indicators program. The Census Use Study's contention has been from the outset

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4. See the Los Angeles Stage II Report, April 1973.

5. Ellen S. Bryant, Mississippi County Population Estimates by Race and Age, Sociology and Rural Life Series, Mississippi State University. See Tables I-1 and I-2 for data abstracted from these reports.



TABLE I-1

MISSISSIPPI COUNTY POPULATION  
ESTIMATES BY RACE AND AGE

BOLIVAR COUNTY

Year	Age	Total	White	Non-white	Percent of Total	
					White	Non-white
1965	Total	58336	19173	39163	32.9	67.1
	5 and under	9711	2295	7416	23.6	76.4
	6-14	15295	3739	11556	24.4	75.6
	15-44	19065	7911	11154	41.5	58.5
	45 and over	14265	5228	9037	36.6	63.4
1966	Total	59010	19790	39220	33.5	66.5
	5 and under	9690	2190	7500	22.6	77.4
	6-14	14940	3560	11380	23.8	76.2
	15-44	19760	7860	11900	39.8	60.2
	45-64	10020	4640	5380	46.3	53.7
	65 and over	4600	1540	3060	33.5	66.5
1967	Total	57500	20510	36990	35.7	64.3
	5 and under	8680	1910	6770	22.0	78.0
	6-14	14150	3630	10520	25.7	74.3
	15-44	19700	8800	10900	44.7	55.3
	45-64	9970	4520	5450	45.3	54.7
	65 and over	5000	1650	3350	33.0	67.0
1968	Total	54650	19840	34810	36.3	63.7
	5 and under	7600	1820	5780	23.9	76.1
	6-14	13600	3360	10240	24.7	75.3
	15-44	18200	8750	9450	48.1	51.9
	18-44	14190	7150	7040	50.4	49.6
	45-64	10170	4320	5850	42.5	57.5
	65 and over	5080	1590	3490	31.3	68.7
1969	Total	52620	17885	34735	34.0	66.0
	0-5	7753	1709	6044	22.0	78.0
	6-14	12522	3243	9279	25.9	74.1
	15-44	17667	7586	10081	42.9	57.1
	18-44	13999	6409	7590	45.8	54.2
	45-64	9915	3905	6010	39.4	60.6
	65 and over	4763	1442	3321	30.3	69.7
1970	Total	49409	18750	30659	37.9	62.1
	0-5	5720	1443	4277	25.2	74.8
	6-14	10916	3011	7905	27.6	72.4
	15-44	18278	8396	9882	45.9	54.1
	18-44	14758	7246	7512	49.1	50.9
	45-64	8280	3880	4400	46.9	53.1
	65 and over	4984	1722	3262	34.6	65.4



TABLE I-2  
MISSISSIPPI COUNTY POPULATION  
ESTIMATES BY RACE AND AGE

WASHINGTON COUNTY

Year	Age	Total	White	Non-white	<u>Percent of Total</u>	
					White	Non-white
1965	Total	79168	33637	45531	42.5	57.5
	5 and under	12843	4670	8173	36.4	63.6
	6-14	19596	7270	12326	37.1	62.9
	15-44	26301	12573	13728	47.8	52.2
	45 and over	20428	9124	11304	45.0	55.3
1966	Total	79690	32820	46870	41.2	58.8
	5 and under	12560	4190	8370	33.4	66.6
	6-14	19510	7100	12410	36.4	63.6
	15-44	26980	12120	14860	44.9	55.1
	45-64	13900	6680	7220	48.1	51.9
	65 and over	6740	2730	4010	40.5	59.5
1967	Total	78140	35530	42610	45.5	54.5
	5 and under	11590	4260	7330	36.8	63.2
	6-14	21040	9700	11340	46.1	53.9
	15-44	24860	11920	12940	47.9	52.1
	45-64	13860	6690	7170	48.3	51.7
	65 and over	6790	2960	3830	43.6	56.4
1968	Total	76550	34850	41700	45.5	54.5
	5 and under	11030	4200	6830	38.1	61.9
	6-14	19010	7920	11090	41.7	58.3
	15-44	25230	12830	12400	50.9	49.1
	18-44	20710	10990	9720	53.1	46.9
	45-64	14540	7010	7530	48.2	51.8
	65 and over	6740	2890	3850	42.9	57.1
1969	Total	75143	33452	41691	44.5	55.5
	5 and under	10421	3693	6728	35.4	64.6
	6-14	18191	7191	11000	39.5	60.5
	15-44	24425	11839	12586	48.5	51.5
	18-44	20393	10446	9947	51.2	48.8
	45-64	15435	7869	7566	51.0	49.0
	65 and over	6671	2860	3811	42.9	57.1
1970	Total	70581	31803	38778	45.1	54.9
	5 and under	7853	2872	4981	36.6	63.4
	6-14	15827	6097	9730	38.5	61.5
	15-44	26336	13363	12973	50.7	49.3
	18-44	21762	11569	10193	53.2	46.8
	45-64	12669	6481	6188	51.2	48.8
	65 and above	6327	2391	3936	37.8	62.2

SOURCE: Ellen Bryant, Mississippi State University, Sociology  
and Urban Life Series

TABLE I-3  
POPULATION OF PLACES, 1965-1970  
WASHINGTON AND BOLIVAR COUNTY

	1965	1966	1967	1968	1969	1970
<u>Bolivar County</u>	58336	59010	57500	54650	52620	49409
Alligator	254	259	264	269	275	280
Benoit	463	465	467	469	471	473
Beulah	432	434	436	439	441	443
Boyle	854	856	857	858	860	861
Cleveland	11750	12065	12380	12696	13012	13327
Duncan	532	545	559	572	586	599
Gunnison	496	506	516	526	535	545
Merigold	687	704	721	738	755	772
Mound Bayou	1744	1822	1900	1978	2056	2134
Pace	524	545	566	587	608	629
Rosedale	2466	2492	2518	2544	2570	2599
Shaw	2288	2333	2378	2423	2468	2513
Shelby	2514	2541	2567	2593	2619	2645
Winstonville	474	487	499	511	524	536
TOTAL	25478	26054	26628	27203	27780	28356
Balance	32858	32956	30872	27447	24840	21053
<u>Washington</u>	79168	79690	78140	76550	75143	70581
Arcola	442	457	472	487	502	517
Greenville	42910	42688	42467	42245	42023	41802
Hollandale	2953	3014	3076	3137	3199	3260
Leland	6148	6118	6088	6059	6030	6000
TOTAL	52453	52277	52103	51928	51754	51579
Balance	26715	27413	26037	24622	23389	19002

SOURCE: U.S. Census of Population, 1960 and 1970.  
Data for years 1965-1969 were obtained by  
extrapolation.

that the survey route should be a last resort because of prohibitive cost.

If Census data and special-purpose surveys do not provide adequate and continuing input to a social/health/resource indicators system, then what remains is a relatively untapped and therefore unrefined reservoir of local administrative data. The problems associated with these kinds of data with respect to the Mound Bayou project have been exhaustively covered in the Stage I report.<sup>6</sup> Basically, the problems include unorganized or, in some situations, non-existent data; incomplete, inconsistent and inaccurate data; lack of comparability of data over time; bureaucratic or proprietary barriers; confidentiality requirements, and other impediments to ready access of data. The most agonizing problem with local data generated for urban sites, a lesser problem for rural sites, is the use of a bewildering assortment of special-purpose geographic delineations to organize data (e.g., welfare, police and health districts; catchment areas; minor and major statistical areas, etc.). This problem is not as intense in a rural area because there are a very limited number of geographic delineations under which data can be organized. The major delineation is by county. Below the county level, the options are rather restricted. The sub-county data shown in this report (with school district data being a special case) were disaggregated from county data or were generated from raw records.

### Generalization of the System

Currently, the indicators program is being implemented in five urban sites and one rural site. A long-term objective of the program is to develop and implement a methodology in numerous sites throughout the country to provide the Office of Economic Opportunity with uniformly-collected and analyzed trendline, baseline and impact data. To accomplish this long term objective, we must think in terms of a "master indicator matrix" that can be constructed from similar data sets generated by different localities in the country.

The concept of a master matrix also implies that common data items collected, summarized and interrelated in a uniform manner will yield comparable kinds of analyses that will, in turn, permit the formulation of hypothetical constructs that have generality beyond any one area. While the syntheses of analyses pertaining to differing places with differing circumstances is a valid and imperative method for the construction and testing of theory, each site has certain unique features that require

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6. See the Mound Bayou, Mississippi Stage I Report, April 1972.

modifications in both methodology and techniques of analyses.

A major differentiation in methodology and techniques of analyses must be drawn between urban and rural areas. Even though a sufficient number of common data items exist from each of the urban and rural sites to permit fostering the master matrix principle, a number of data items also are relevant and important for rural sites but irrelevant for urban sites, and vice versa. For example, we have assembled and analyzed data in this report relating to agriculture (United States Department of Agriculture Crop Report and U.S. Agricultural Census). Since Bolivar County, Mississippi has an agricultural economic base, these data are important in determining the economic status of the county. However, crop report data would be virtually irrelevant for Los Angeles, Chicago, Atlanta and Providence. It would have some relevancy to the Phoenix study since two of the primary care centers in the Phoenix network are being organized to serve a rural population. Another example of data more relevant to a rural site than an urban site is motor vehicle registration. In Bolivar County, the population outside the main places tends to be located and scattered along an intricate network of dirt roads. Accessibility to major towns, because of the distances involved, is facilitated by personally owned and operated motor vehicles.

In terms of the master matrix concept, another important difference must be drawn between urban and rural areas: different techniques of analyses. Essentially, in urban areas our methodology requires the organization of data by census tracts. In Los Angeles, for example, we have obtained numerous observations on some 296 census tracts (subdivided into six areas). In rural areas, we are restricted to county or place data. Statistically, there is a great deal more that can be done in analyzing 296 census tracts than 14 places. Therefore, with respect to Los Angeles, we have a sufficiently adequate data base to perform parametrical statistical analyses, using such techniques as correlation and factor analyses, and step-wise regression analyses to construct trendlines that can be used as a basis for monitoring possible changes in health and social status. Performing statistical analyses using parametrical techniques is not an option that can be used in Mound Bayou since the number of observations (e.g., place) is small, and various grosser geographic levels are analyzed in terms of different subject matter. The only kind of analysis that can be adequately performed in the Mound Bayou data is qualitative descriptive analysis, the importance of which should not be diminished since it accomplishes the monitoring objectives of the program.

In terms of the master matrix concept, further differentiation should be made between different rural sites (and also urban sites) to accommodate unique features. We have already indicated, for example, that the Mound Bayou (Bolivar County) site is somewhat different than our Lowndes County,



Alabama site, even though both are rurally-based. For example, both Bolivar and Lowndes County are predominantly black, rural and Southern; but they differ in the degree of ruralism. Bolivar is less rural, and the availability of community resources figure prominently. Except for the health center itself, community resources are almost completely absent in Lowndes. These two differences would, for example, affect the interpretation of birth data (among others). Because of the relative isolation of Lowndes County from medical resources and facilities, a great reliance on supervised midwifery has been perpetuated. Therefore, part of the high risk pregnancy syndrome (i.e., birth outside the hospital not attended by a physician and lack of prenatal care) would have a different meaning in Lowndes than it would in Bolivar County (where midwifery has been on the decline). In attempting to generalize, the high risk pregnancy syndrome across rural/black/Southern areas, this difference must be taken into account.

The construction and analyses of a master indicator matrix consisting of common data items for different settings remains an important ingredient of the present program. However, if that matrix is to have comprehensive meaning, unique features within sites must be considered as well.

### Evaluation

The project recognizes the need of the Office of Economic Opportunity to obtain data that will be useful in evaluating the impact of their programs on the areas containing them. One of our major considerations with respect to evaluating impact in the present project site is that the Mound Bayou multi-purpose health center and hospital do not operate in a vacuum. As will be demonstrated in this report, a large array of agencies operate in the area and provide resources and health and social services to the population of Bolivar County. These agencies, to some extent, contribute to the aggregate impact exerted on the communities. In addition to facilities and organized services, any changes in demography, attitudes, life styles and technology also contribute to the aggregate impact. Moreover, an attempt to isolate specific OEO program impact is further mitigated by the interaction of the health center and hospital with other community resources. The health center, in addition to its major task (health maintenance), is particularly involved in a multiplicity of social services. Even though these services are health-related in a broad sense, they are not all strictly health maintenance functions. These programs include child and youth programs; social services; nutritional and social programs for the elderly; programs related to education (counseling); work rehabilitation programs; social rehabilitation programs in coordination with the Sheriff's Office; engineering and sanitation programs; and counseling programs to assist or handhold recipients through the "determination of eligibility" processes required for obtaining welfare and Medicaid. To the extent they are involved in these activities, the facilities in

Mound Bayou are not only launching unique programs but also are promoting the use of other community resources such as welfare, probation services, Medicaid, health department clinics, education, and the like. However, from a purely statistical point of view, this interaction with community resources makes evaluation rather imprecise because increases in community resources (e.g., increase in welfare) are neither clearly a result of health center activity (e.g., handholding applicants through the eligibility process) nor of increased activity of the agency involved (e.g., processing of more welfare recipients by case workers).

In attempting to discern the specific impact of particular programs, the first necessity is to differentiate the parts of the total impact contributed solely by the OEO health programs, those parts contributed by the pressure exerted by the OEO health programs on community agencies, those parts contributed by other agencies solely, or those parts contributed by extraneous factors such as changes in demography or life styles. Until these factors are differentiated, little may be expected of an evaluation of impact of specific programs.

Given these constraints, three levels of evaluation remain that may be performed. The first level has already been implied by the master matrix concept. That is, in the aggregate, we ought to be able to discern differential impact more readily in sites with a great many health and social intervention programs than in sites with fewer such programs. Since one of the objectives of the OEO health programs is to enhance the health and social well-being of the communities they service, the indication of a favorable impact, regardless of sources contributing to this impact, would provide a fulfillment of this objective.

The second level of evaluation is more focused on particular OEO areas. Conceivably, aggregate impacts in the area can be discerned over the long run through trend analysis. In terms of the Mound Bayou project, if a dysfunctional situation continues to be abated until the problem no longer exists in significant proportion, then one objective of the health center (the elimination or mitigation of the dysfunctional health problem) has been met. As long as the dysfunctional problem has been neutralized, it is a rather moot question whether the impact was due solely to OEO activities, the interaction of OEO with other agencies, by other agencies' activities, or non-program-related factors.

Only one way of performing the third level of evaluation would attribute impact specifically to the source, i.e., to perform a stringent "before-and-after" study of the OEO clientele and a similarly-constructed control group (residing within the service area) not utilizing OEO services. In general, this kind of study would require a rigid longitudinal experimental design so that differences between the test group (clientele) and the control group are attributable solely to the treatment (e.g., services) provided to the clientele. The design and implementation of such a study would be extremely difficult. We believe that designing and implementing a "before-and-after" study is beyond the scope of the present project, although in Stage III some effort will be made to integrate OEO health programs utilization data with the baseline data developed from local sources.

## CHAPTER II

### THE OEO HEALTH PROGRAM IN MOUND BAYOU, MISSISSIPPI CENSUS PROFILES OF ITS SERVICE AREA

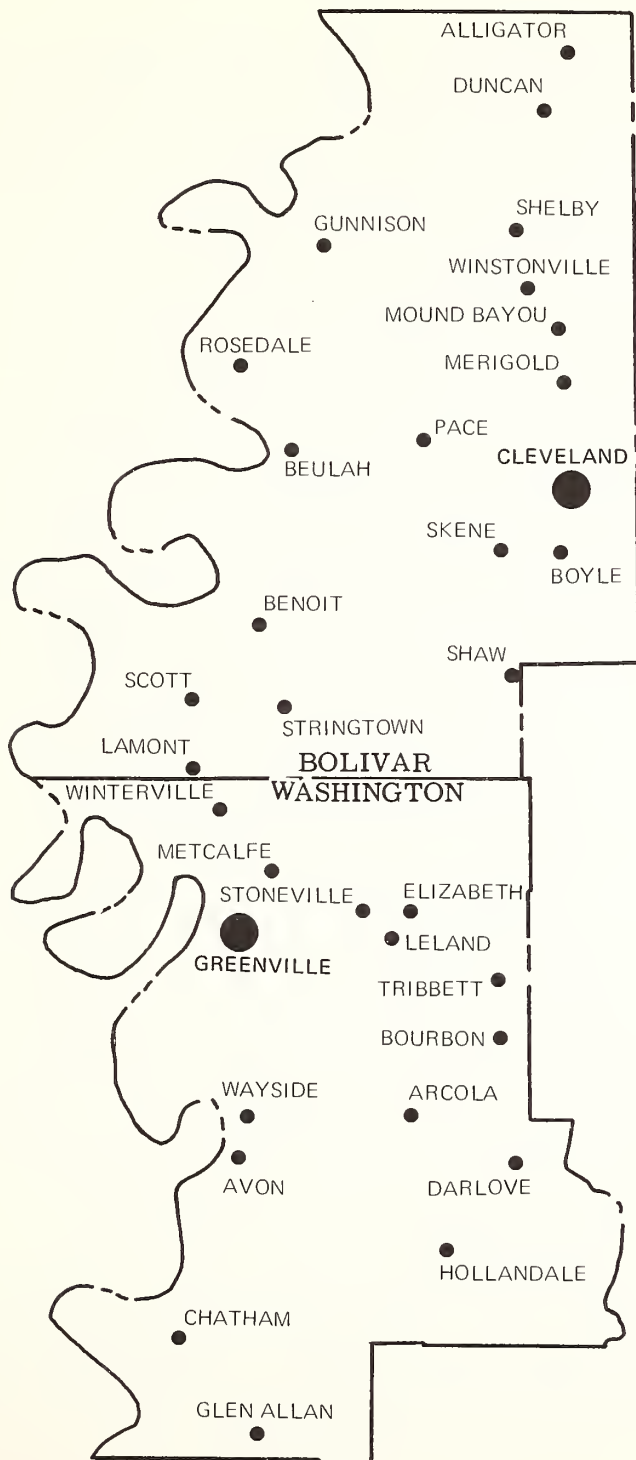
The purposes of this chapter are (1) to provide the reader with a brief history of OEO-funded health services in Mound Bayou, and (2) to profile, at a single point in time with 1970 Census data, the area served in the Mississippi Delta country. Such information is necessary to the proper consideration of methodological and analytical descriptions included elsewhere in this report.

A public health corporation embodying both a hospital and a health center exists in the town of Mound Bayou, Mississippi. Its primary service area consists of the town and surrounding places in Bolivar County. Also included for comparison purposes is the adjoining Washington County, bordering Bolivar on the south. Washington County resembles Bolivar County in many general aspects, with the notable exception that Washington County has no public health facilities comparable to the Mound Bayou organization.

Section II-A of this chapter describes the OEO health organization in Mound Bayou. Statistical indicators available by place (cities, towns or villages) are presented in Section II-B, while the final part of the chapter, Section II-C, is devoted to characteristics associated with the racial composition of the two counties. Census profiles have been developed for a wide range of social and economic data for the areas under study.



FIGURE II-1  
 INCORPORATED PLACES AND ALL UNINCORPORATED PLACES  
 WITH 1,000 OR MORE POPULATION IN BOLIVAR AND WASHINGTON COUNTIES



SOURCE: Mississippi State Highway Department

## II-A

### DELTA COMMUNITY HOSPITAL AND HEALTH CARE CENTER, INC.

Health care facilities in the Mound Bayou, Mississippi OEO site consist of a 51-bed hospital and a multi-purpose health care center, incorporated in May 1972 as the Delta Community Hospital and Health Care Center, Inc. The corporation was formed as successor to the separate Mound Bayou Community Hospital, Inc. and North Bolivar County Health and Civic Improvement Council, Inc. (Tufts-Delta Health Center).

The Tufts-Delta Health Center was initiated in January 1967 and funded through Tufts University of Boston, Massachusetts, as one of the first OEO Healthright programs, receiving national and international acclaim as a model for rural health services delivery. Mound Bayou Community Hospital was first funded directly by OEO in June 1967.

In September 1971, affiliation of the Tufts-Delta Health Center was transferred to the Stonybrook Medical School of the State University of New York (SUNY). However, due to decisions by the New York State Legislature, no sound funding basis was established to support the development of the Stonybrook Medical School. Consequently, the OEO Office of Health Affairs took steps to align and ultimately relate the two Mound Bayou programs. A single grant in May 1972 of \$5.5 million incorporating the work programs of both hospital and health center was awarded to the newly-formed Delta Community Hospital and Health Care Center (DCHHCC).

The objectives of the amalgamation were to eliminate duplication of services and to rationalize and develop a more effective rural health care system. Under the new system, the hospital would exclusively deal with inpatient care, while all outpatient services would be handled by the Health Center.

On June 1, 1972, Governor William Waller of Mississippi vetoed the initial 12-month grant to DCHHCC. His reasons were listed as poor physical condition of facilities, possible violation of the Department of Health, Education and Welfare Life Safety Code for Medicare and Medicaid hospitals, duplication of services, and possible State licensing violations.

A three-month emergency grant of \$1.4 million was accepted in June, pending an investigation by the American Public Health Association. A special committee of the APHA prepared an evaluation of the hospital and health center, listing recommendations for improvement. A subsequent 9-month grant for \$4.1 million was authorized in the fall of 1972 after receiving a "pocket veto" from Governor Waller. At the present time, DCHHCC is appealing the recent suspension of its State hospital license, but no final adjudication has been made.

Health care in Bolivar County is also administered through the County Health Department's main facility in Cleveland and its satellite clinics located in various places throughout the county. Hospitals are located in Cleveland, Rosedale, Scott and Shelby. Skilled nursing care is provided in Cleveland. Washington County is also served by a county health depart-

ment located in Greenville, hospitals in Greenville, Hollandale and Leland, and skilled and intermediate nursing care in five different facilities in the county.

Details of available health manpower, services and facilities are provided in the analytical Chapter IV in the Public Health Section.

II-B  
CHARACTERISTICS FOR PLACES  
WITHIN WASHINGTON AND BOLIVAR COUNTIES

Population and Land Area

Bolivar and Washington counties are located in the Mississippi Delta area on the west central border of the State, north of Vicksburg, northwest of Jackson and due south from Memphis, Tennessee. According to the 1970 Census of Population,<sup>1</sup> Bolivar County has a population of 49,409 distributed over 923 square miles, or 53.5 persons per square mile; while the adjoining Washington County, with land area of 734 square miles and a population of 70,581, averages a population density of 96.2, almost twice that of Bolivar.

Urban population (cities and towns over 2,500 persons) constituted less than 43 percent of Bolivar County, contrasted with almost 70 percent for Washington County. In both counties, rural population was dominated by persons in places of less than 1,000 inhabitants, or scattered throughout the country.

As shown in Table II-B-2, rural population in both counties was characterized by non-farm dwellers; although in Bolivar this category comprised almost half the total population, against a fourth part of Washington County.

Both counties experienced an overall decrease in population between the 1960 and 1970 Censuses. Population in Bolivar decreased 9.3 percent, although urban population more than doubled, while rural population declined some 36 percent.

The 1970 Census listed 14 cities, towns or villages within Bolivar County that were either incorporated places or were unincorporated with 1,000 or more inhabitants constituting 47.0 percent of the county population. Each of these places experienced an increase in population between 1960 and 1970, although the same was not true in our comparison county. Washington County had only 5 designated places; however, these accounted for over 70 percent of the total population. As can be seen in Table II-B-3, both metropolitan Greenville (including corporate city and adjacent unincorporated area) and the town of Leland experienced a decline in population. One contributing factor to this decrease may have been the closing in 1963 of Greenville Air Force Base. The base is now the site of the Greenville Municipal Airport.

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1. Refer to Tables II-B-1, II-B-2 and II-B-3 for sources of data in this discussion.

TABLE II-B-1

## POPULATION OF LAND AREAS AND COUNTIES, 1970 and 1960

	Bolivar	Washington
Land Area in Square Miles	923	734
1970 Population	49,409	70,581
Per Square Mile	53.5	96.2
Urban Population	21,062	48,908
Percent of Total	42.6	69.3
Urbanized Areas	--	--
Other Urban	21,062	48,908
Rural Population	28,347	21,673
Places of 1000-2500 Pop.	2,134	2,154
Other Rural	26,213	19,519
1960 Population	54,464	78,638
Urban	10,172	52,959
Rural	44,292	25,679
Percent Change, 1960-1970	- 9.3	-10.2
Urban	107.1	- 7.7
Rural	-36.0	-15.6

SOURCE: Number of Inhabitants: Mississippi, 1970 U.S. Census of Population, PC(1)-A26, pp. 15,16.



TABLE II-B-2

## DISTRIBUTION OF RURAL POPULATION

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	<u>Total Population</u>	<u>Rural Nonfarm</u>	<u>Rural Farm</u>
Bolivar County	49,409	47.8	10.2
Washington County	70,581	23.3	7.4

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SOURCE: General Social and Economic Characteristics, 1970 U.S. Census of Population, PC(1)-C26, pp. 141-143.

TABLE II-B-3

POPULATION OF PLACES:  
1960 and 1970

	1970	1960	Percent Change
<u>Bolivar County</u>			
Alligator	280	227	+ 23.3
Benoit	473	453	+ 4.4
Beulah	443	421	+ 5.2
Boyle	861	848	+ 1.5
Cleveland	13,327	10,172	+ 31.0
Duncan	599	465	+ 28.8
Gunnison	545	448	+ 21.7
Merigold	772	602	+ 28.2
Mound Bayou	2,134	1,354	+ 57.6
Pace	629	420	+ 49.8
Rosedale	2,599	2,339	+ 11.1
Shaw	2,513	2,062	+ 21.9
Shelby	2,645	2,384	+ 10.9
Winstonville	536	413	+ 29.8
<u>Washington County</u>			
Arcola	517	366	+ 41.3
Greenville	39,648	41,502	- 4.5
Greenville North	2,154	2,516	- 14.4
Greenville Total *	41,802	44,018	- 5.0
Hollandale	3,260	2,646	+ 23.2
Leland	6,000	6,295	- 4.7

\* The incorporated city of Greenville was differentiated from the unincorporated area known as Greenville North in the Census. Consequently, statistics used elsewhere in this report may reflect figures for incorporated Greenville only. The two have been combined (as in this instance) wherever possible to facilitate study of the metropolitan area.

SOURCE: Number of Inhabitants, Mississippi, 1970 U.S. Census of Population, PC(1)-A26, pp. 11-12.

### Racial, Ethnic, Age and Sex Characteristics for Places

In 1970, both counties were predominantly non-white<sup>2</sup> (black and other races). Bolivar was 62 percent non-white, compared to 55 percent in Washington County. Bolivar's largest city, Cleveland, was less than 40 percent non-white. In the three principal places within Washington County, whites were in the minority considered against all other races.

Of Bolivar County's population of 49,409, blacks numbered 30,338, or 61 percent; the remaining 39 percent were white or other races. Of 10,280 families, 5,398 were black, and 4,882 were white and other races.<sup>3</sup>

On the other hand, Washington County's population of 70,581 consisted of 38,460 blacks (54.5 percent) and 32,121 white and other races (45.5 percent). However, blacks made up less than half the number of families, 7,355 or 15,815, with white and other races distributing the remaining 8,460 family units.

Spanish language population<sup>4</sup> in Bolivar County tallied 447, one percent of the total, in 82 families, while Washington County identified only 145 such persons, or 0.2 percent of the county population.

Less than one percent of persons in either county are foreign born. This generally holds true for cities and towns as well, ranging from less than half of one percent to slightly more than one percent, as shown in the Table II-B-5.

While only one percent of Bolivar residents were children of one or both foreign parents, almost twice that percentage of Washington inhabitants displayed such heritage. Such persons were three times more prevalent in Greenville than in Cleveland.

Of those born on foreign soil, all such persons residing in the City of Cleveland claimed a native tongue other than English, but almost 10 percent of Greenville's foreign-born population came from English-speaking nations.

Statistics on households and population in group quarters (including institutions, Armed Forces barracks, college dormitories, rooming houses and other group living arrangements) are presented in Table II-B-6.

Persons under 18 years of age comprised some 43 percent of the population in both counties, with the 18-64 age group showing a plurality in each county. Persons 65 years of age and over were one-tenth of Bolivar County's population, and 9 percent of the total number of Washington inhabitants.

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2. The term "non-white", although not generally preferred, is used throughout this report to reference "black (or Negro) and other races" and is taken from original data sources.
  3. See Tables II-C-1 and II-C-2 and accompanying discussion of family characteristics in next section.
  4. Those persons to whom Spanish is a native language, spoken predominantly in the home.

TABLE II-B-4

SUMMARY OF GENERAL CHARACTERISTICS: 1970  
For All Places 2500 and Above

	POPULATION									
	All Persons					Persons 14 Yrs. & Over % Married				
	Number	% Change 1960-1970	% Negro & Other Races	% Under 18 Years	% 18-64 Years	% 65 Years & Over	Fertility Ratio*	Male	Female	Persons 18 Years & Over % Male
Bolivar County	49,409	-9.3	62.1	43.4	46.5	10.1	529	57.5	52.9	45.7
Cleveland	13,327	31.0	37.8	35.5	56.9	7.7	384	58.0	53.4	46.3
Rosedale	2,599	NA	65.7	43.4	43.1	13.5	634	56.5	50.0	43.6
Shaw	2,513	NA	71.0	43.8	43.0	13.2	558	55.3	48.5	43.4
Shelby	2,645	NA	68.2	42.3	41.9	15.8	531	55.3	46.1	41.3
Washington County	70,581	-10.2	54.9	43.1	47.9	9.0	495	63.6	57.2	45.2
Greenville	39,648	-4.5	52.5	41.0	49.9	9.1	462	64.8	56.8	44.4
Hollandale	3,260	23.2	71.0	45.2	42.9	12.0	553	57.4	50.0	41.9
Leland	6,000	-4.7	57.2	41.1	47.0	11.9	461	64.3	56.8	43.6

SOURCE: General Population Characteristics - Mississippi, 1970 U.S. Census of Population, PC(1)-B26, Table 16, pp. 39-40.

\*Children under 5 years per 1,000 women 15-49 years.

TABLE II-B-5

CHARACTERISTICS OF FOREIGN POPULATION  
For All Places 2500 and Above

	Population	% Foreign Born	Foreign Born-- % With Mother Tongue Other Than English	% Natives of Foreign or Mixed Parentage
Bolivar County	49,409	0.4	---	1.1
Cleveland	13,327	0.4	100.0	0.7
Rosedale	2,599	0.4	---	---
Shaw	2,513	1.1	---	---
Shelby	2,645	0.8	---	---
Washington County	70,581	0.7	---	1.9
Greenville (corp)	39,648	0.7	90.5	22
Hollandale	3,260	1.1	---	---
Leland	6,000	0.9	---	---

SOURCE: General Social and Economic Characteristics, 1970 U.S. Census of Population, PC(1)-C26, pp. 141-143.

TABLE II-B-6  
GENERAL POPULATION CHARACTERISTICS: 1970  
For All Places 2500 and Above

	HOUSEHOLDS			POPULATION IN GROUP QUARTERS	
	Number	% Change 1960-70	Persons per Household	Number	% of Total
Bolivar County	12,708	-4.7	3.77	1,466	3.0
Cleveland	3,574	34.3	3.40	1,168	8.8
Rosedale	766	NA	3.28	88	3.4
Shaw	708	NA	3.55	---	---
Shelby	790	NA	3.35	---	---
Washington County	19,432	-4.8	3.61	467	0.7
Greenville	11,442	-0.4	3.44	322	0.8
Hollandale	892	18.3	3.65	---	---
Leland	1,784	0.2	3.36	10	0.2

SOURCE: General Population Characteristics - Mississippi, 1970 U.S. Census of Population, PC(1)-B26, Table 16, pp. 39-40.



Of persons 14 years of age and over, the majority are married, with a larger proportion of males married than females in both counties and places within. Women outnumber men in all places under study in the Delta region. Men make up 46 percent of the Bolivar population and 45 percent of the Washington population among all adults.

### Characteristics of Families

A substantial majority of the 1970 population in the two counties consisted of persons who were born in Mississippi and currently living in the State. The percentage was smaller for Washington County, with significantly more urban population than Bolivar. Also interesting to note is that the smaller the place, the more of its residents are native-born Mississippians. See Table II-B-7.

Among persons 25 years of age and older. Bolivar County inhabitants, on the whole, completed a median 8.7 years of school, compared with 9.8 years for Washington individuals. Cities and larger towns boasted higher medians, while persons in smaller towns reported less years of formal education. The percentage of residents completing 4 years of high school or more in Bolivar County ranged from a low of less than 25 percent in Shaw to more than half of Cleveland inhabitants. Corresponding figures for Washington County tend toward the 40 percent level or lower, as seen in Table II-B-7.

Median income for families in Bolivar County in 1970 ranged from \$3,268 per annum in Shaw to \$7,460 in Cleveland with a county median of \$4,465. Refer again to Table II-B-7 for details. Nearly half of the families (44 percent) had incomes below poverty level, while only 7.5 percent had incomes of \$15,000 or more. Both Shaw and Shelby count over half their population below poverty level, and only about 4 percent in the upper income bracket. Dissimilarly, Washington County had a median income of \$5,760, less than 35 percent below poverty level income, and almost 10 percent with incomes of \$15,000 or higher.

Table II-B-8 shows a variety of indicator statistics for the two counties and their largest cities. Migrant workers comprise only just over 12 percent of either county's population, although Cleveland supports a substantially larger migrant population. School data show only about 7 percent of elementary (1-8 years) children in private schools, and around 90 percent of 14-17 year old persons in attendance at public or private schools. As noted in the following chapter, school attendance in Mississippi was not made compulsory until 1972.

According to the tabular data, most married couples in the two counties had their own households, although the percentage of couples without households was a full percentage point higher in Bolivar County than in Washington, but quite the opposite for principal cities. In the areas under review, the percentage of families with their own children ranged from 25 to 30, with the overall county statistics higher than similar indicators for cities.

Over 60 percent of persons under 18 years of age still were living with their parents in 1970, with similar figures apparent for counties and

TABLE II-B-7

FAMILY CHARACTERISTICS FOR PLACES: 1970  
For All Places 2500 and Above

	Total Population	NATIVE POPULATION	PERSONS 25 YEARS OF AGE AND OVER		FAMILIES			Worked During Census Week-- % Working Outside Residence County	Persons Who Worked in 1969-- % Worked 50-52 Weeks
			Median School Yrs. Completed	% Completed 4 Years High School or More	Median Income (dollars)	% With Income Of			
						Less Than Poverty Level	\$15,000 or More		
Bolivar County	49,409	87.8	8.7	---	4,465	44.3	7.5	6.0	40.5
Cleveland	13,327	84.6	12.1	51.4	7,460	23.4	13.7	7.1	48.3
Rosedale	2,599	82.5	7.9	30.9	5,500	39.3	8.6	---	---
Shaw	2,513	90.4	8.0	23.4	3,268	53.3	3.9	---	---
Shelby	2,645	92.4	8.0	28.7	3,412	54.5	4.0	---	---
Washington County	70,581	83.4	9.8	---	5,760	34.1	9.7	3.4	53.2
Greenville	39,648	81.9	10.5	41.0	6,308	29.3	8.9	3.1	59.3
Hollandale	3,260	89.7	8.9	34.2	4,532	46.5	10.5	---	---
Leland	6,000	85.1	10.3	40.6	6,160	33.3	14.2	---	---

SOURCE: 1970 U.S. Census of Population, General Social and Economic Characteristics, PC(1)-C26, pp. 141-143

TABLE II-B-8

## FAMILY CHARACTERISTICS FOR PLACES, 1970

	Persons 5 Yrs. & Over - % Migrant	Children in Elem. Schools - Percent in Private School	Persons 14-17 Yrs. - % in School	Married Couples w/out Own Household	Families - % with own Children Under 6	Persons Under 18 Yrs. - % Living With Both Parents	Women 35-44 Yrs. - Cumulative Fertility Rate*
<u>Bolivar County</u>	12.4	7.0	91.0	3.7	28.3	61.4	4,833
Cleveland	23.4	6.6	95.2	1.9	25.7	65.7	3,838
<u>Washington County</u>	12.4	7.1	86.4	2.7	29.7	65.2	4,069
Greenville	12.5	4.5	88.5	2.9	28.9	63.1	3,716

\* Children ever born per 1,000 women of all marital classes.

SOURCE: General Social and Economic Characteristics - 1970 U.S. Census of Population,  
PC(1)-C26, pp. 141-143.

cities. The cumulative fertility rate for Bolivar County women was noticeably higher than for Washington (4,833 compared to 4,069), although the rates for cities were quite similar. These numbers may be reviewed in Table II-B-8.

### Employment Characteristics

The non-worker/worker ratio in Bolivar County was a full 25 percent higher than in Washington in 1970, as shown in Table II-B-9. In Bolivar, the ratio ranged from 1.48 to 1.73, while the span in Washington was from 1.71 to 1.93. This may be substantiated by comparing unemployment rates in the two counties with 9.4 percent in Bolivar, ranging from 3.4 percent in Shelby to a phenomenal 16.1 percent in Shaw. These are opposed to 7.5 percent for Washington, with 4.4 percent in Leland at one end of the spectrum and Hollandale's 12.4 percent at the other.

Approximately 40 percent of women 16 years and over were in the labor force, with high incidence in the larger cities. Among married women, husband present, larger percentages were included in the labor force, although these fell somewhat for those women with children 6 years of age or less. Young males had a 56.5 percent representation in the Bolivar County labor force while their counterparts in Washington enjoyed a 10 percentage point advantage in labor force membership. Participation of retirement age males in the labor force ranged from one-fourth to one-third of the total age group membership.

A plurality of employed persons in both counties was involved in white collar occupations. This characteristic was reinforced in Cleveland and Greenville, although the smaller towns rely somewhat more heavily on manufacturing industries. Very few of those working during the Census week traveled outside their home county to work. Of the interviewees, those working a full year (50-52 weeks) in 1969 numbered only about 40 percent in Bolivar, while more than half of Washington County worked a full schedule. A fuller description of employment, including distribution of industrial employment, is included in Chapter IV.

### Housing Characteristics

Bolivar County, with a total of 13,829 housing units, had an average of 3.6 persons per unit, according to figures derived from the 1970 U.S. Census of Housing, see Table II-B-10. Washington County, with 21,108 units, averaged 3.3 persons. Data are also given in the table for towns and cities with a population of 2,500 or more.

Table II-B-11 gives more detailed data for occupied housing units, by county and place. For example, in Bolivar County we find that 5,385 housing units, or 39 percent of the total lacked some or all plumbing facilities. Perhaps a more revealing fact is that some 90 percent or 12,501 units were one-unit structures.

Less than one-sixth of occupied housing units represented one-person households. The median number of rooms in both counties was 4.6 rooms per

TABLE II-B-9

EMPLOYMENT CHARACTERISTICS FOR PLACES: 1970  
For Places 2500 and Above

	Nonworker/ Worker Ratio	% IN LABOR FORCE					Civilian Labor Force % Unemployed	EMPLOYED PERSONS		
		Married Women, Husband Present		Male				% in Manufacturing Industries	% in White Collar Occupations	% Government Workers
		Female 16 Yrs. & Over	With Own Children 6 & Under	18-24 Yrs.	65 Yrs. & Over					
						Total				
Bolivar County	2.18	39.9	45.4	43.7	56.5	27.9	17.8	37.5	21.5	
Cleveland	1.48	48.9	55.6	52.3	53.5	33.3	17.5	52.3	25.4	
Rosedale	1.91	45.9	---	---	---	---	26.3	---	---	
Shaw	2.73	39.3	---	---	---	---	27.3	---	---	
Shelby	2.08	41.8	---	---	---	---	16.5	---	---	
Washington County	1.93	41.3	43.7	40.1	66.6	26.4	19.2	42.4	17.8	
Greenville	1.71	45.9	47.5	43.9	70.7	25.0	21.8	46.2	18.2	
Hollandale	2.26	35.7	---	---	---	---	14.2	---	---	
Leland	1.93	39.2	---	---	---	---	12.8	---	---	

SOURCE: General Social and Economic Characteristics—Mississippi, 1970 U.S. Census of Population,  
PC(1)-C26, pp. 141-142, 144.



TABLE II-B-10

## SELECTED HOUSING CHARACTERISTICS: 1970

	Total Population	Total Housing Units	Avg. No. of <b>Persons Per</b> Housing Unit
<u>Bolivar County</u>	49,409	13,829	3.6
Cleveland	13,327	3,749	3.6
Mound Bayou	2,134	545	3.9
Rosedale	2,599	809	3.2
Shaw	2,513	766	3.3
Shelby	2,645	809	3.3
<u>Washington County</u>	70,581	21,108	3.3
Greenville	39,648	12,044	3.3
Greenville North	2,154	540	4.0
Greenville Metropolitan	41,802	12,584	3.3
Hollandale	3,260	932	3.5
Leland	6,000	1,932	3.1

SOURCE: General Housing Characteristics - Mississippi, 1970 U.S. Census of Housing, HC(1)-A26, pp. 24, 26, 28, 30, 32, 35-41, 43, 45-50.

SELECTED HOUSING CHARACTERISTICS: 1970

SOURCE: General Housing Characteristics - Mississippi, 1970 U.S. Census of Housing, HC(1)-A26, pp. 24, 26, 28, 30, 32, 35-41, 43, 45-50.

unit. Slightly more than half of Bolivar County housing units were presided over by Negro heads of household. The corresponding figure for Washington County is somewhat less than 50 percent. These data plus related statistics for cities and towns may be observed in Table II-B-11.

For 6,800 owner-occupied housing units in Bolivar County, the median value per unit was \$10,000, ranging from a high of \$13,200 in Cleveland, down to \$6,100 in Rosedale. Median value was slightly higher for 11,132 units in Washington County, at \$10,800. Values there spanned from \$7,000 in Hollandale to \$11,200 in Greenville proper.

Renter-occupied housing in the counties presents a definite contrast to owner-occupied units. Of 5,908 renter-occupied units, 3,480 or 58.9 percent lacked some or all plumbing facilities, and the median contract rent was \$30. Plumbing facilities were better in cities and towns with over 1,000 inhabitants, although about one-third of Cleveland units and almost half of Mound Bayou housing lacked full plumbing facilities. Median contract rent was constant at \$30 throughout the county, except for a high of \$49 in the city of Cleveland. As shown in Table II-B-11, median contract rent in Washington County was higher than in Bolivar, but the incidence of units with inadequate plumbing was lower as well. Statistics for units averaging more than one person per room and the number of units vacant for sale only or for rent are also given.

## II-C

### MAJOR CHARACTERISTICS BY ETHNIC AND RACIAL COMPOSITION

#### Poverty Status of Families

Of 10,280 families in Bolivar County, according to the 1970 Census,<sup>1</sup> 5,398 or 52.5 percent were blacks. The remaining families are characterized as white or other races. Eighty-two families were Spanish language, or one percent of the total.

Families with income below the poverty level constituted some 44 percent of all families within the county, 69 percent of all black families and 52 percent of the total Spanish language families. Mean family income was \$1,842 for all races, \$1,906 for blacks and \$1,431 for Spanish language persons. Overall, 37 percent of poverty families received public assistance income. This jumps to over 40 for blacks and well over half of Spanish language families. Female heads are present in almost 14 percent of the families, with less than one-fourth of black families so defined, and only 7 percent of Spanish language families with female heads.

Less than half of Washington County's families are black, but no other racial breakdowns are given in the Census data. The percentage of all families with income below poverty level is 34, but leaps to almost 60 for blacks in this income group. Blacks surpass the all-family mean income of \$2,031 by \$74, making \$2,105. One-fourth of all families receive public assistance income, compared with almost 30 percent of the blacks-only group. Families with female heads number 12 percent for all races, and 23 for blacks only.

Except for Spanish language families, the figures change when the focus is placed on families in Bolivar County, with income less than 75 percent of the poverty level, those who may be deemed the "critically poor". For all families, 36 percent of the population falls in this category, with 58 percent of blacks and 52 percent of Spanish language persons. The mean income deficit is \$320 lower for this group than for those at poverty level and below. Washington County is much the same again. Better than one-fourth of all races and almost a half of black families are below 75 percent of the poverty level. The difference in mean income deficit is \$537, between the poverty level's \$1,920 and the 75 percent group's \$1,383.

Expanding the definitions in the opposite way, the consideration of families with income less than 125 percent of the poverty level, regarded as little better than a subsistence income, over half of Bolivar County's families fit the description. A staggering 79 percent of black families

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1. See Table II-C-1.

TABLE II-C-1

## POVERTY STATUS OF FAMILIES\* BY RACE AND ETHNICITY - 1969

	Bolivar			Washington			
	Total	Black	White & Other**	Spanish Language	Total	Black	White & Other
<u>All Families</u>	10,280	5,398	4,882	82	15,815	7,355	8,460
<u>Families With Income Less Than Poverty Level</u>							
Number of Families	4,559	3,720	839	43	5,387	4,366	1,021
Percent of all families	44.3	68.9	---	52.4	34.1	59.4	12.1
Mean family income	\$1,842	\$1,906	NA	\$1,431	\$2,031	\$2,105	---
Mean Income Deficit	\$2,165	\$2,299	NA	\$2,765	\$1,920	\$2,003	---
% Receiving Public Assistance	37.1	41.9	NA	55.8	25.3	29.2	---
Families with Female Head	1,399	1,285	114	6	1,940	1,708	232
Percent of all families	13.6	23.8	---	7.3	12.3	23.2	2.7
<u>Families With Income Less Than 75% of Poverty Level</u>							
Number of Families	3,671	3,108	563	43	4,011	3,323	688
Percent of all families	35.7	57.6	---	52.4	25.4	45.2	8.1
Mean Income Deficit	\$1,522	\$1,560	---	\$1,711	\$1,383	\$1,409	---
Families with Female Head	1,182	1,128	54	6	1,596	1,422	174
Percent of all families	11.5	20.9	---	7.3	10.1	19.3	2.1
<u>Families With Income Less Than 125% of Poverty Level</u>							
Number of Families	5,308	4,281	1,027	43	6,535	5,148	1,387
Percent of all families	51.6	79.3	---	52.4	41.3	70.0	16.4
Mean Income Deficit	\$2,802	\$2,983	---	\$3,810	\$2,487	\$2,648	---
Families with Female Head	1,537	1,398	139	6	2,137	1,809	328
Percent of all families	15.0	25.9	---	7.3	13.5	24.6	3.9

\* Excludes inmates of institutions, members of the Armed Forces living in barracks, college students living in dormitories, and unrelated individuals under 14 years of age.

\*\* Obtained by subtraction; therefore certain statistics not obtainable.

SOURCE: General Social and Economic Characteristics, 1970 U.S. Census of Population, PC(1)-C26, pp. 304, 310, 332, 338 and 343.



fall under this level, while the same 52 percent of Spanish language persons are below this level, as for the previous two. The mean income deficit for Spanish language families is over \$1,000 more than the all-family figure, but the blacks-only statistic is within close range of the county data. Under this classification, 15 percent of the families have female heads, while 26 percent of blacks and 7 percent of Spanish language families show a female head of household.

Once again, the comparative figures for Washington County reflect a lower incidence of poverty. Below the 125 percent poverty level, 41 percent of all families are contained and 70 percent of black families. As before, more female heads of household exist in Washington than in Bolivar, almost 14 percent for all races and nearly a quarter of black families.

### Family Organization

Of children under 18 years of age, more than 60 percent in each of the two counties live with both parents. When examined by race, however, as shown in Table II-C-2, the figures show a significant disparity between blacks and other children. Percentage-wise, black children are over three times as likely to come from disorganized families than children of white and other races.

### Employment and Earnings Characteristics

In 1970, 64 percent of all males 16 and over in Bolivar County were in the labor force.<sup>2</sup> Black males had 55 percent of their number in the labor force and Spanish language persons added 62 percent of their total. Forty percent of all females 16 and over were in the labor force, but only 37 percent of black females and 36 percent for Spanish language females. Less than 10 percent of all males in the 16-21 age group were unemployed or not in the labor force, but over one-sixth of black members of this age group were not employed. All of the 33 Spanish language males between the ages of 16 and 21 were members of the labor force.

Washington County experienced a better showing for labor force membership, with 71 percent overall and 60 percent for black males. For females, the figures were 41 percent for all races and 40 percent for blacks. Males aged 16-21 fostered an unemployment rate of nearly 15 percent for all races and over 20 percent for blacks.

Of 8,138 employed males in Bolivar, 2,224 were employed in agriculture; however, only 145 out of 5,804 females were so employed. These compare with 1,954 agriculturally-employed males out of a Washington County total of 13,130, and 106 of 8,853 females. Clearly, Bolivar County had much more agricultural manpower, particularly percentage-wise, than neighboring Washington County.

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2. See Table II-C-2.

TABLE II-C-2

## FAMILY ORGANIZATION BY RACE

	Bolivar			Washington		
	Total	Black	White & Other*	Total	Black	White & Other
Total Population	49,409	30,338	19,071	70,581	38,460	32,121
Total Children Under 18 Years Old	21,504	15,582	5,922	30,642	18,807	11,835
Living with Both Parents	13,204	8,194	5,010	19,992	9,928	10,064
Percent of Total	61.4	52.6	84.6	65.2	52.8	85.0
In Disorganized Families	33.6	47.4	15.4	34.8	47.2	15.0

\* Obtained by subtraction; therefore, certain statistics are not obtainable.

SOURCE: General Social and Economic Characteristics, 1970 U.S. Census of Population, PC(1)-C26.

A study of labor mobility of males 30-49 years of age in 1970 yields interesting statistical facts. Out of 3,399 in this age group in Bolivar County, 168 men who did not work in 1965, as well as 355 men who did have a job in 1965, were not working in 1970. But 256 persons who did not work in 1965 did have jobs in 1970. This leaves a residual of 2,620 men who had jobs in 1965 and were working in 1970 as well. Black workers seem to have experienced proportionally greater shifts in mobility, with the Spanish language worker proving quite stable. Washington County figures show much the same pattern.

Median earnings for all males were \$3,643 in Bolivar County, contrasted with \$5,094 for the same group in Washington County. Black males also fared better in Washington, with median earnings of \$3,191 to \$2,298 for Bolivar black males. A study of Table II-C-3 will reveal that each job category was higher paid in Washington County than in Bolivar and that women are paid a good bit less than their male counterparts. The median earnings for a woman in Bolivar County were \$2,322, and \$2,556 in Washington County. Black females earned \$1,417 in Bolivar and \$1,492 in Washington.

#### Educational and Family Characteristics

Bolivar County's 1970 population of 49,409 included 43,753 persons 5 years old and above.<sup>3</sup> Related figures for blacks are 30,338 population and 26,079 five years old and above, and for Spanish language persons, 447 and 383. A larger percentage of Washington County residents appear to be under 5 years of age, with many of these part of the black population.

School enrollment for Bolivar consists of 18,313 enrolled, or 63.5 percent of eligible persons, with the largest number of persons contained within the elementary school section. Only 7 percent of county children attend non-public (private or parochial) schools, with those numbers substantially less for blacks and Spanish language persons. In Washington County, school enrollees accounted for 56 percent of all persons in the 3-34 age group. As in Bolivar, most of these are in the elementary grades. Attendance at private schools claims over one percent of eligible students. A more detailed description of educational data such as these is available in the Education Section of Chapter IV.

From a total population of 9,578 males, 25 and over, we find 8.3 median years of school completed. Thirty percent of these were high school graduates. Data for women are approximately the same as in the case for men. Washington County figures, as usual, are higher than those for Bolivar, but ethnic groups in both counties show a lack of proper educational attainment.

Bolivar County, in 1970, had 2,130 women 35-44 years of age, ever married, while Washington County had that number and an additional seventh part. Black women in this group numbered 1,163 in Bolivar, and 1,568 in

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3. See Table II-C-4.

TABLE II-C-3

## EMPLOYMENT AND EARNINGS CHARACTERISTICS OF COUNTIES BY RACE AND ETHNICITY, 1970

	Bolivar			Spanish Language	Washington		
	Total	Black	White & Other*		Total	Black	White & Other
EMPLOYMENT							
Males 16 and over	13,982	7,267	6,715	131	19,727	9,486	10,241
In Labor Force	8,890	4,009	4,881	81	14,043	5,740	8,303
Percent of Total	63.6	55.2	---	61.8	71.2	60.5	81.1
Females 16 and over	16,328	9,134	7,194	133	23,631	12,186	11,445
In Labor Force	6,509	3,400	3,109	50	9,770	4,831	4,939
Percent of Total	39.9	37.2	---	36.2	41.3	39.6	43.2
Males 16-21	3,325	1,907	1,418	33	3,723	2,275	1,448
Unemployed or Not in Labor Force	392	324	68	---	572	404	168
CLASS OF WORKER, 16 YRS. & OVER							
Male, Employed	8,138	3,469	4,669	81	13,130	5,093	8,037
Female, Employed	5,804	2,794	3,010	50	8,853	4,122	4,731
Male, Employed In Agriculture	2,224	1,222	1,002	31	1,954	1,104	850
Female, Employed In Agriculture	145	71	74	---	106	49	57
LABOR MOBILITY FOR MALES**							
Male, 30-49 Yrs. of Age in 1970	3,399	1,430	1,969	51	6,104	2,330	3,774
Nonworker in 1965; nonworker in 1970	168	124	44	---	250	166	84
Nonworker in 1965; worker in 1970	256	143	113	7	388	204	184
Worker in 1965; nonworker in 1970	355	246	109	---	334	226	108
EARNINGS***							
Males 16 & Over with Earnings****	\$3,643	\$2,298	---	\$5,107	\$5,094	\$3,191	---
Professional, managerial & kindred occupations	7,473	5,430	---	---	8,596	5,333	---
Craftsmen, foremen & kindred occupations	5,030	2,889	---	---	5,622	3,692	---

\* Obtained by subtraction; therefore, certain statistics are not obtainable.

\*\* The concept of "worker" includes the employed plus members of the Armed Forces.

\*\*\* Median earnings in 1969 of persons in experienced civilian labor force.

\*\*\*\* Includes persons in other occupational groups not shown separately.

Continued....

TABLE II-C-3 (continued)  
EMPLOYMENT AND EARNINGS CHARACTERISTICS OF COUNTIES BY RACE AND ETHNICITY, 1970

	Bolivar			Spanish Language	Washington		
	Total	Black	White & Other*		Total	Black	White & Other
EARNINGS (cont'd)							
Operatives, including transportation	3,407	2,566	---	7,132	4,347	3,959	---
Laborers, except farm	1,721	1,695	---	---	2,589	2,500	---
Farmers and farm managers	4,274	1,742	---	---	7,350	---	---
Farm laborers, excepting unpaid and farm foremen	1,936	1,801	---	---	2,207	2,041	---
Females, 16 Yrs. and Over, with Earnings****	2,322	1,417	---	4,053	2,556	1,492	---
Clerical and kindred occupations	2,863	2,049	---	---	3,610	2,104	---
Operatives, including transportation	2,769	1,886	---	---	3,045	2,449	---

\* Obtained by subtraction; therefore, certain statistics are not obtainable.

\*\*\*\* Includes persons in other occupational groups not shown separately.

SOURCE: 1970 U.S. Census of Population, General Social and Economic Characteristics, PC(1)-C26, pp. 290, 296, 325, 331, 283, 289, 318, 324, 342, 341.



TABLE II-C-4

## EDUCATIONAL AND FAMILY CHARACTERISTICS FOR COUNTIES BY RACE AND ETHNICITY: 1970

	Bollivar				Spanish Language	Total	Black	White & Other*
	Total	Black	White & Other*					
<u>Total Population</u>	49,409	30,338	19,071		447	70,581	38,460	32,121
<u>Total Population 5 &amp; Over</u>	43,753	26,079	17,674		383	62,716	33,504	29,212
<u>School Enrollment</u>								
<u>Total Enrolled 3-34 Yrs. of Age</u>	18,313	12,272	6,041		138	22,587	14,026	8,561
<u>Nursery School</u>						625	472	153
Public	795	700	95		---	375	339	36
Private	697	645	52		---	250	133	117
<u>Kindergarten</u>	98	55	43		---	1,038	693	345
Public	955	896	59		---	672	606	66
Private	879	860	19		---	366	87	279
<u>Elementary (1-8 yrs)</u>	76	36	40		---	15,131	9,732	5,399
Public	10,976	8,152	2,824		80	14,050	9,649	4,402
Private	10,213	8,051	2,162		38	1,081	83	998
<u>High School (1-4 yrs)</u>	763	101	662		42	5,190	2,891	2,299
Public	3,477	2,233	1,244		36	4,679	2,868	1,811
Private	3,267	2,214	1,053		36	511	23	488
<u>College</u>	210	19	201		---	603	238	365
<u>% Enrolled 3-34 Yrs. Old</u>	2,110	291	1,819		22	56.4	62.0	---
<u>% Enrolled 3-34 Yrs. Old</u>	63.5	67.0	---		44.2			
<u>Years of School Completed</u>								
<u>Males, 25 and over</u>	9,578	4,866	4,712		8.1	14,907	6,747	8,160
Median Years Completed	8.3	5.3	---		7.0	9.6	5.9	---
% High School Graduates	30.1	8.1	---		11.1	37.4	12.7	---
<u>Females, 25 and over</u>	11,776	6,550	5,226		9.6	18,284	9,192	9,092
Median Years Completed	9.0	6.6	---		4.0	9.9	7.2	---
% High School Graduates	32.0	11.1	---		7.3	36.1	14.0	---
<u>Children Ever Born</u>								
<u>Women 35-44 Ever Married</u>	2,130	1,163	967		32	3,513	1,568	1,945
Children Ever Born	10,719	7,812	2,907		142	14,983	8,847	6,136
Per 1,000 Women Ever Married	5,032	6,717	3,326		4,438	4,265	5,642	1,377

\* Obtained by subtraction; therefore, certain statistics are not obtainable.

SOURCE: General Social and Economic Characteristics, 1970 U.S. Census of Population, PC(1)-C26.

Washington. Children ever born per 1,000 women ever married totaled 5,032 in Bolivar, 6,717 for blacks and 4,438 for Spanish language persons. In Washington County, this rate is 4,265 versus 5,642 for blacks. The rates for children ever born are particularly high among blacks at this point in time.

Other data used throughout this report have been obtained from State and local government, or special surveys not conducted by the Census Bureau. Census data have been avoided for use as denominators wherever possible. The preceding sections have been intended, rather, to familiarize the reader with the two-county area.

## CHAPTER III

### PROCEDURES AND METHODOLOGY

#### BACKGROUND

As we have pointed out earlier in Chapter I, the procedures and methodology used to implement the Mound Bayou Stage II effort are somewhat different from those used in urban areas. The purpose of this section is to provide a sufficiently detailed overview of our procedures so that the reader will have some basis for interpreting the results.

The actual point of departure for the Mound Bayou project was implementation of Stage I which is described in some detail in a separate report.<sup>1</sup> In the Stage I processes, Census Use Study staff traveled to Jackson and Bolivar County, Mississippi, for the purposes of initiating contacts with State and county officials, and to inventory the sources of available data that might be used as input to an indicators program. On the basis of this inventory, a social indicator matrix was designed and presented in Section D of the Mound Bayou Stage I Report. Moreover, a study plan designed to advance the program into Stage II was formulated. The intention of the Stage I effort was to determine the feasibility of continuing into Stage II and to provide several alternative approaches for proceeding with the understanding that a determination would be made as to which approach to use as a result of a meeting between the Office of Economic Opportunity and the Census Use Study representatives. Essentially, three alternative Stage II approaches were provided. These were:

1. Gross level. The first alternative was that Stage II processes involve organizing the data on the county level only. The original proposition was that the indicator study would perform Stage II processes in four counties -- Bolivar, Coahoma, Washington and Sunflower Counties. The four-county plan was advanced because the Health Center and hospital in Mound Bayou believed that their service area would ultimately include the four-county area. The gross level, therefore, called for developing a large variety of historical statistics for each of the four counties.

2. Sub-county levels. The second alternative was to go to the other extreme. That is, it was recommended that with an expanded effort on our part, that an attempt could be made to obtain sub-county level data for each of the four counties. This procedure would have involved disaggregating county level data to sub-county data. With very few exceptions, data of interest to the project, if available at all in published form, are only available at county

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1. See the Mound Bayou Stage I Report, April 1973.

level. To obtain sub-county level data, it would be required, more often than not, to process clerically basic records. Therefore, the sub-county route would have required a major expenditure in time and money to implement.

3. Combination of gross and sub-county levels. This approach called for providing sub-county and county statistics for Bolivar County, and county statistics for the remaining three counties (all three, two, or one of these counties).

The ultimate decision reached between the Census Use Study and the Office of Economic Opportunity representatives was to implement a modified version of the third approach. The Mound Bayou health center's and hospital's primary service area was principally Bolivar County (northern part of the county) with little likelihood that the service area would be expanded to cover the four-county area. The plan that was ultimately agreed upon was to provide county and sub-county statistics for Bolivar County and to obtain mostly county statistics for one of the three counties for the purpose of providing a comparison county. Washington County was selected as the comparison county.

#### IMPLEMENTATION OF STAGE II PROCEDURES

The basic task was to obtain the data inventoried in the Stage I Mound Bayou report. The indicator matrix, shown in the Stage I report, represented an ideal situation that would have been reached had all the data sources uncovered during the exploratory stage been actually obtained, processed, and analyzed. However, the final result, while very elaborate from any standard, fell somewhat short of the ideal situation. Rather than reintroduce the long explanations of the sources of data available and the processes required to obtain them as was done in the Stage I report, Figure III-1 contains a listing of the sources, data items, years for which data items were obtained, level of aggregation of the data items (e.g., county, place, rural/urban), and the form in which the data were obtained. The data items listed were obtained for both Bolivar and Washington Counties. However, with several exceptions to be pointed out later (e.g., welfare), sub-county data are shown only for Bolivar County while county level data are shown for both Bolivar and Washington Counties.

A social indicator matrix, which shows the statistics for all the items and for all levels of aggregations listed in Figure III-1, is contained in Appendix A.

As can be seen from Figure III-1, many of the data items included in the study were obtained with some difficulty from basic sources. Most of the health data were extracted from computer tapes obtained from the Mississippi State Department of Public Health and the Mississippi State Hospital Commission. The welfare data presented in this report were extracted clerically from the claims files maintained in the East and West Bolivar County and Washington County Welfare Offices. The Census Use Study arranged with the Mississippi



Department of Public Welfare in Jackson to employ a number of clerks in each of these field offices. The welfare data were tabulated and tallied from the source data collected at the county field offices by Census Use Study clerical staff. Quality control measures were adopted in Mississippi and Washington to minimize clerical error. In terms of educational data, a successful effort was made to obtain enrollment data for private academies and parochial schools. These data were obtained from the school administrators themselves. In addition, some student origin data were obtained from the Delta State College in Cleveland (Bolivar County), Mississippi.

We have data on vocational and technical education for both Bolivar and Washington Counties for the years 1965 to 1970 inclusive. The data include enrollment of students in vocational and technical courses in the high schools and also years when adult education was offered in particular courses.<sup>2</sup>

The areas of training are Agriculture, Marketing (Distributive Education), Health, Home Economics (useful and gainful), Business and Office, Trade and Industrial, and Occupational Orientation.

In our Stage I report, we stated that we would attempt to obtain some sub-county epidemiological data from the County Department of Health. In December 1972, Census Use Study staff had negotiated an arrangement with the Mississippi State Department of Health to extract these kinds of data from closed and active files maintained by the Health Department Offices in the counties. However, the files turned out to be rather raw, disorganized and massive.

In Bolivar County, active case files are maintained alphabetically by each of ten clinic sites, including the principal facility at Cleveland. Closed files, however, are kept in strict alphabetical order without regard to year opened or closed. Thus, files of persons treated when the health department began operation in the 1930's are included along with persons whose files terminated as late as 1972. The closed files in Bolivar County number over 40,000, while the tally of active cases is around 6,000 at any recent point in time.

Obviously, the processing of such a multitude of files, with a number of records per file, would require a major clerical effort. The nature of the work at the health department calls for constant usage of active files. Available workspace is at a premium, so that no more than two or three clerical assistants might be brought in. Add to this the conservative estimate that stripping a single file would take at least 10 minutes, and an unfeasible task results, particularly for Stage II analysis.

Not wishing to abandon the prospect of obtaining sub-county epidemiological statistics, a new plan was formulated as input to the forthcoming Stage III

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2. All technical data are on the county level.



analysis. The active files have been "frozen" at a single point in time, January 1, 1973. All cases closed since that time are being maintained separately from other closed files, and a registry of newly-created files has been initiated. This should yield us, over several months' time, an accurate picture of the normal caseload of the department. Such steps will facilitate as well our analysis by area, since the active files are separated by clinic sites, which may be considered to be grossly accurate representations of residence of the population serviced. As indicated, this plan will be further developed and formalized in the Stage III process.

There are several conspicuous omissions from the listing shown in Figure III-1. The most conspicuous omission is the area of social pathology. that generally consists of mental health and crime data. The omission of mental health data reflects the relative absence of mental health activities in the two counties during the 1965-1970 reference period. Crime data would be obtainable from the Sheriff's Office, but would require a great deal of clerical processing. As we indicated in the Stage I report, there is a tremendous problem in obtaining data from the Sheriff's Office because, until recently, the Sheriff's tenure was limited to one term in office. Also, the Sheriff's Office doubled as the tax assessor for the counties.

#### CAVEATS ASSOCIATED WITH DATA

There are many caveats associated with the data that will be presented in the following sections of this report. Many of these caveats relate to specific data sets and will be explicated when these data sets are presented and analyzed. In addition to the specific caveats, some caveats generally apply to most of the data sets. The most important of these caveats is that, although every reasonable effort was made to assure complete and adequate coverage of each data file used in this study, undoubtedly a number of holes remain in the files.

Data that were extracted clerically from source materials or from raw files are subject to some undetermined (although minimal) clerical errors, and errors resulting from omissions of records. Irrespective of the rigidity of quality control, inevitably built-in errors are associated with the large scale clerical operation required to implement the present program.

Finally, automated data obtained from our sources in Mississippi were assumed to be "clean". In some situations (e.g., birth records and morbidity files) where the same data were available from published materials or worksheets (in some more aggregated form) some cross-checks were made on the completeness of the coverage.

#### ANALYSES OF DATA

The major geographic units that will be compared in this report are Bolivar and Washington County, Mississippi. Bolivar County is the domicile

and primary service area of the Mound Bayou Health Center and Hospital; therefore, many of the statistics presented in the following sections of the report for Bolivar County will be presented on the sub-county level.

The analytical approach will be descriptive and comparative. The data presentation will be tabular and graphic. The major purpose of the analysis is to account for, in at least general terms, the nature of changes (or lack of changes) in health status, social status, the resources and services, and their delivery by the institutions, agencies and programs in the counties. Basically, the analysis will provide some insight into both effects (impacts) and the agents (causes) contributing to these effects. To the extent that the analyses are temporally oriented, qualitatively derived trendlines will be established that can be tracked and monitored on an on-going basis (Stage III) to determine the improvement or deterioration, if any, of the problems (or impacts) uncovered by the study. This will provide a foundation for evaluating the impact the OEO programs and other social intervention programs are having on the health and social status of the population residing in the county.

DATA FILES OBTAINED FOR BOLIVAR AND WASHINGTON COUNTIES (MAJOR CHARACTERISTICS)

Subject area -- File name	Data years	Major breakdowns	Level of aggregation	Form	Source of data
<u>Agriculture</u>					
Crops and livestock harvest	1965-1970	Totals only	County	Tabular	U.S. Department of Agriculture-- Statistical Reporting Source
ASCS payments and distributions	1971	Totals only	County	Tabular	U.S. Department of Agriculture-- Statistical Reporting Source
Farm operator characteristics	1964-1969	Race	County	Tabular	U.S. Census of Agriculture
<u>Education</u>					
Racial composition	1968-1970	Race	School district	Tabular	Department of HEW
Parochial and private schools enrollment	1965-1970	Some by grade	School district	Tabular	School administrators
Technical and vocational education	1965-1970	Totals only	School district	Tabular	State Department of Education
Public schools--enrollment, expenditures	1965-1971	Some by grade	School district	Tabular	State Department of Education
Drop-out Data	1969-1971	Some by grade	School district	Tabular	State Department of Education
Migration and absences, transportation	1969-1971	Some by grade	School district	Tabular	State Department of Education
<u>Employment</u>					
Manufacturing establishments	1968-1969	Totals only	County, Place	Tabular	Miss. R & D Center
Industrial employment	1969	Totals only	County, Place	Tabular	Miss. R & D Center
Benchmark data	1965-1971	Totals only	County	Tabular	State Employment Comm.
<u>Housing and Property</u>					
Property values and land area	1968	Totals only	County, Place	Tabular	Miss. R & D Center
Condition of residential dwellings	1965-1969	Totals only	County, Place	Tabular	Miss. R & D Center
Estimated housing needs	1970	Totals only	County, Place	Tabular	Miss. R & D Center
<u>Income</u>					
Personal income by major source	1965-1970	Source of income	County	Tabular	U.S. Bureau of Economic Analysis
Earnings by broad industrial sector	1965-1970	By industry	County	Tabular	U.S. Bureau of Economic Analysis
<u>Public Health</u>					
TB Chemoprophylaxis (initiated and terminated)	1970	Totals only	County	Computer tape	State Department of Health
Births--general characteristics	1965-1969	Race	County rural/ city	Computer tape	State Department of Health
Births--additional characteristics	1968-1969	Totals only	County rural/ city	Computer tape	State Department of Health
Fetal deaths	1965-1970	Race	County	Computer tape	State Department of Health
Divorce	1965-1970	Race	County	Computer tape	State Department of Health
Diabetes (percent positive)	1966-1967	Race/Sex	County	Computer tape	State Department of Health

DATA FILES OBTAINED FOR BOLIVAR AND WASHINGTON COUNTIES (MAJOR CHARACTERISTICS) --Cont.

Subject area -- File name	Data years	Major breakdowns	Level of aggregation	Form	Source of data
<u>Public Health--cont.</u>					
Deaths	1965-1970	Race/age/sex Major cause	County	Computer tape	State Department of Health
Communicable diseases	1968-1970	Race/age/sex	County	Computer tape	State Department of Health
One day hospital Census	Oct. 11, 1972	Source by hosp.	County, Place	Computer tape	State Department of Health
Manpower	1965-1970	Race/age/sex	County, Place	Tabular	State Department of Health
Health facilities	1965-1970	Totals only	County, Place	Tabular	Commission on Hospital Care
Crippled children	1971-1972	Totals only	County, Place	Computer tape	State Department of Health
Ambulatory care	1965-1970	Encounters with Health Dept.	County	Computer tape	State Department of Health
<u>Public Welfare</u>					
Expenditures, vendor payments, social services (Medicaid)	1970-1971	Cases, amounts	County, Place	Tabular	State Department of Public Welfare
Categorical assistance	1969-1970	Totals only	County, Place	Tabular	County Welfare Department
Food stamps programs	1967-1971	Totals only	County	Tabular	County Welfare Department
Sales and Taxation	1966	By category	County, Place	Tabular	Miss. R & D Center
Indicated sales	1969-1970	As indicated	County	Tabular	Miss. R & D Center
Sales and tax by industry group	1969-1970	As indicated	County	Tabular	State Tax Commission
Sales, corporate and personal income tax					
<u>Transportation</u>					
Motor vehicle registrations	1965-1970	Totals only	County	Tabular	Miss. Motor Vehicle Opt.
Traffic flow	1968-1971	Average volume	County, Place	Map	State Highway Department

CHAPTER IV  
ANALYSIS AND INTERPRETATION

This chapter contains analysis and interpretation of data for subject matter areas:

Section A - Public Health

Section B - Welfare and Medicaid

Section C - Education

Section D - Economics.



IV-A  
PUBLIC HEALTH

The data presented and analyzed in this section concern public health. These data were obtained primarily from the Mississippi State Department of Public Health in Jackson, Mississippi, or its local offices in Bolivar and Washington Counties. Other data concerning health care facilities were obtained from the Governor's Office, Division of Comprehensive Health Planning and the Mississippi Commission on Hospital Care. Additional studies, such as those concerning patient origin, were also obtained.

Prior to presenting and analyzing these data, a conceptual framework must be formulated to support the analyses. Since most of the data presented in this section are concerned with the delineation of various facets of the health delivery system operating in Bolivar and Washington Counties, Mississippi, our conceptualization necessarily focuses on the essential components of those systems. Data consist of at least five key components.<sup>1,2</sup> The components are:

1. Assessment and/or determination of past, present or potential status of the populations receiving the health services.
2. Ambulatory care.
3. Hospital care data.
4. Quality of services rendered and barriers preventing access to these services.
5. Fund and payment mechanism analysis.

A data system reflecting 100 percent of the five components of the health delivery system is an ideal that can be approached, to some extent, but not totally realized by the present study. The purpose of the following discussion is to dissect the five components of the data system, and then to specify the extent that the data presented in this section fit into this scheme.

The first component, identified as "assessment and/or determination

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1. Adapted in part from HSMHA, National Center for Health Services, Research and Development, Experimental Health Services Delivery Systems, and The Utilization of Health Services: Indices and Correlates, a research bibliography, Health Services Research and Training Program, Purdue University.
  2. See also Deshaies, John and Seidman, David, "Health Information Systems", Socio-Economic Planning Sciences, Vol. 5, pp. 515-533, 1971.

of past, present or potential status of the population receiving health services", refers specifically to the social and health status of these populations. A number of important concepts can be organized under this rubric. First is the concept of socio-demographic characteristics of the population at risk. This includes such population variables as sex, age, race, and ethnic structure, as well as socio-economic variables (income, employment status, education, family organization, etc.). A wealth of socio-demographic characteristic data is compiled in this report, although not necessarily contained in the present section. In Chapter II, socio-economic profiles of both Bolivar and Washington County are presented. In succeeding sections of this report, data are presented on such socio-economic matters as employment, taxation, agriculture, housing, education, income and welfare. Another aspect of status data is related to the existing health status and social pathology of the population at risk. This aspect is covered in the present section of the report. Health status is measured by data on such subjects as morbidity (reportable diseases, special registries on Tuberculosis and Diabetes), deaths, births, fetal deaths and crippled children. From the births and fetal death records, maternal and child health measures are available. Such measures include the high risk pregnancy syndrome, pregnancy complications, prematurity, infant diseases and distress.

Additional information relating to past, present, and potential status of populations at risk covered in this section (but under the hospital and extended care facility components) is the location of extant health care facilities. While these health facilities could not be fully related in terms of utilization patterns, they are nonetheless located within the service area of the Mound Bayou facilities and can, therefore, be drawn upon for medical care. Finally, we have the available manpower aspect of the status of the population at risk. Later in this section some health manpower data are presented to deal with this aspect of the status of the population at risk.

The second major component of data pertaining to health services delivery systems concerns ambulatory care. Essentially, three organizational entities exist from which ambulatory care data may be gathered. The first entity consists of the clinics operated by the county offices of the State Department of Public Health. For example, in Bolivar County there are eleven clinics -- one each located in Cleveland, Mound Bayou, Duncan, Shelby, Merigold, Shaw, Alligator, Benoit, Pace, Rosedale and Gunnison. Clinic sessions are conducted in these sites once per week in Cleveland and twice a month in the other places. While obtaining data on each of the clinics would require rather extensive processing of Health Department raw files as described previously in this report, we do have clinic data aggregated to the county level. The second source of ambulatory care in these counties is the OEO Health Center facility in Mound Bayou. Utilization data from the Mound Bayou facilities will be integrated with the remainder of the data base during Stage III operations. The third facet of ambulatory care is that provided by the physician. The most important data file relating to physician utilization is the Medicaid (XIX) file which provides not only utilization and cost information for ambulatory care services, but also some data on cost of hospitals, doctors, laboratories, and other providers of health care services to a medically indigent population. Since Medicaid in Mississippi is handled as a category of welfare, we will deal with Medicaid data in a later section.

The third major component of an adequate statistical system reflecting health service delivery is that concerning hospitals or extended care facilities. Community hospitals (whether public or privately endowed) are probably the most important health care provider for the following reasons:

1. They provide perhaps the most expensive segment of health care.
2. They offer a unique service -- inpatient care.
3. They represent probably the largest single group of health services and professions in any area.
4. The hospital's traditional patterns of delivery and their integration with other community health care services may undergo more alterations than other elements in the health care delivery system because of recent developments (e.g., Health Maintenance Organizations [HMO's], pending National Health Insurance, Medicaid, and Medicare).

Basically, two sets of inpatient data relating to hospitals are important input to information systems dealing with health services delivery. The first set concerns hospital inpatient data and the second set relates to extended care facilities such as sanatoria and nursing homes. Similar kinds of data (e.g., patients' characteristics, admissions, discharges, diagnosis, source of payment data) are collected for hospitals, inpatient and extended care facilities. The methods of collecting such data, however, differ according to type of facility. Generally, the method used to collect data for short-term inpatient facilities involves the use of discharge records, whereas adequate data on long term facilities requires utilization information focused upon the patient's progress through the system.

In terms of the present study, we need to report a dearth of information available on inpatients of hospital and extended care facilities. We have data from a one-day hospital census provided by the State Comprehensive Health Planning Agency. Beyond this study of patient origins we have obtained some rather detailed information on hospital and nursing home capacity that includes information on licensed beds, annual bed days available, number of admissions, days of care provided, percent occupancy, average length of stay, and some patient characteristics information. The key for undertaking adequate analysis of hospital (or extended care facility) inpatient data is to relate these data to patient demographic characteristics and patient origin analysis. Unfortunately, hospital administrators have shown no tendency to do this.

One data set with a relationship to hospital and nursing home facilities is that concerning Medicaid. From Medicaid files we were able to obtain data on beneficiaries and vendors relating to the utilization of hospitals and nursing homes by the indigent population. (See the Welfare section.)

The fourth component of a statistical information system dealing with health services delivery concerns quality of services rendered. Basically, this component can be viewed from two vantage points. The first is the



whole question of quality of medical services per se, usually approached through "peer review" by the medical profession itself. This aspect of quality is beyond the scope of the present study. The second vantage point in reviewing quality of service rendered is through an examination of barriers preventing adequate access to the service. While defining these barriers is not a simple task, most of the analyses contained in this report deal at least indirectly with this problem. Especially important as subjects for study are such barriers as financial problems which prevent people from using a service; application requirements to become eligible to obtain a service (e.g., to obtain Medicaid in Mississippi, a recipient must first be determined eligible for welfare; the process for determination of eligibility of welfare is rather tedious and demeaning); and the lack of transportation to reach an available service (e.g., to initiate receipt of welfare unless disabled, the applicant must present himself to the Welfare Offices in Cleveland, Rosedale or Greenville. In many situations, this requires the traversing of great distances). Whether the medical service lacks quality, is adequate, or of outstanding quality really is a moot point if potential users are prevented from direct access to the service.

The fifth component of a statistical information system pertaining to health services delivery may be labeled "fund and payment mechanism analyses". This is probably the most under-developed component of information systems because obtaining data requires access to detailed budgetary information maintained by the providers of health services. The only set of data which even vaguely relates to this aspect of health services delivery systems is Medicaid data. Since cash flow analyses focus primarily on provider or vendors of health care (including ancillary functions such as pharmaceuticals and vendors of prosthetic devices), the Medicaid data concerning vendors do indicate payment mechanism for a sector of the indigent population (discussed in the Welfare section).

The materials in the present section of the report deal almost exclusively with health data and are organized to reflect the conceptual scheme briefly discussed above. The first sets of data to be presented will deal with the health status of the population. These data will essentially reflect impact-- that is, they will indicate what the health has been in the past, and what it is at the end year of the Stage II reference period (1970 or 1971). The second set of data will reflect Health Department clinic activities and other programs in the area. These data will basically get at utilization patterns and so-called ambulatory care. A third set of data deals with hospital and extended-care services. Other portions of the conceptual scheme discussed above (particularly barriers and Medicaid) will be examined in later sections of this report.

#### Sources of Data - Health Status

The major data presented and discussed in this part of the health section were obtained from the Mississippi State Department of Public Health which has provided invaluable cooperation and assistance in providing data, and, in some situations, in preparing data. As indicated earlier, health

status is a difficult concept to grasp; it is even more difficult to measure. No single indicator measures every aspect of health status. Different indicators are required for different segments of the population. Health status indicators obtained from death records relate mostly to the older segments of the population. Conversely, health indicators extracted from reportable disease registers, especially venereal disease, are evidenced by populations which are neither infant nor elderly. Some categories of reportable diseases such as tuberculosis, influenza, parasitic diseases, although somewhat selective in terms of the affected, do cut across various segments of the population.

Given the above observations, a number of other reasons remain that help explain why health status is difficult to measure. One important reason is the nature of the data used to make the measurement. The data usually do not cover morbidity. Mostly they cover reported, or otherwise deduced, incidence of morbidity. While death data can and do indicate the various factors culminating in death, they do not in themselves indicate the prevalence of associated morbid factors within the living population. Reportable diseases also reflect mostly incidence, although in at least one area (tuberculosis) we have obtained some rather detailed prevalence data.

The data sources to be examined in this part of the report that reflect health status are the following (identified in the order of analysis):

1. Birth records - maternal and child health.
2. Morbidity data
  - a. Reportable diseases - mostly venereal disease
  - b. Tuberculosis data
  - c. Diabetes data.
3. Death data
4. Divorce data
5. Health manpower (person power) data
6. Crippled children.



## Maternal and Child Health - Examination of Birth Data

The most widely used indicator of health status of MCH is infant mortality. Because it is a rare phenomenon, this indicator is difficult to apply to small areas. Infant mortality data, however, have been calculated and are shown in Table IV-A-1. This table indicates that the infant death rate is higher for non-whites<sup>3</sup> in both counties in the five-year period (1965-69) than for whites. A slight decrease may be noted in infant mortality among non-whites in Bolivar and Washington Counties over the five-year period, indicating perhaps a downward trend.

Among untraditional indicators of MCH status, we include such factors as birth status (born to married or unmarried mothers), prematurity measured by low birth weight, pregnancy complications, age of mother at birth, parity or the number of previous deliveries, and the attendant at birth. All these variables are part of what might be labeled the "high-risk pregnancy syndrome". In brief, this means that given certain conditions of pregnancy, the chances of infant survival, well-being and behavioral development are strongly related to prenatal and neo-natal processes. A great part of this configuration was dealt with at length in Census Use Study Report No. 12.<sup>4</sup> Since that study was relevant to a northeastern urban area (New Haven, Connecticut), only certain aspects are applicable to the Delta area. The fact that the present study deals with a Southern rural area adds important dimensions requiring examination (e.g., attendant at birth).

The high-risk pregnancy syndrome can be explicated by the following generalizations abstracted from Census Use Study Report No. 12.

1. Positive relationships exist between certain socio-economic and social pathological factors and the high-risk pregnancy syndrome. Mothers from lower socio-economic status (SES) strata more frequently tend to manifest conditions related to pregnancy problems, infant distress, and prematurity. These conditions (as delineated in New Haven) were such factors as births to unmarried mothers, births to mothers under 18, high parity, and the extent, if any, of the prenatal care. The pregnancy problems to which these factors were related include premature birth weight, pregnancy complications (e.g., postpartum anemia) and infant distress.
  2. In New Haven, both causes and effects were selective of certain population sectors, and not randomly distributed among the entire city. In general, a disproportionate segment of the non-white population was residing in lower socio-economic areas, and thus was subject to the concomitants and effects of the high-risk pregnancy syndrome.
- 
3. The label "non-white", used throughout this presentation, is a basic classification of the Mississippi State Department of Health.
  4. U.S. Bureau of the Census, Health Information System II, Census Use Study Report No. 12, Washington, D.C., 1971.

TABLE IV-A-1

Total Births  
Total Deaths to Infants  
Less Than 1 Year

	Bolivar			Washington		
	Births	Death Less than 1 Year	%	Births	Death Less than 1 Year	%
White						
1965	313	3	1	677	17	3
1966	297	4	1	590	19	3
1967	291	7	2	586	12	2
1968	337	7	2	571	18	3
1969	339	7	2	613	16	3
Non-White						
1965	1319	66	5	1383	86	6
1966	1207	69	6	1302	63	5
1967	1044	47	5	1265	62	5
1968	1067	41	4	1155	58	5
1969	1031	42	4	1206	42	4

In terms of the present study, the above factors are examined in a slightly different context. The birth statistics relating to Bolivar and Washington Counties are presented in Tables IV-A-2 to IV-A-9. In the forthcoming parts of this section, we will analyze and interpret these statistics in terms of five configurations which are interrelated to some extent. These are: (1) Total fertility by race; (2) Birth status (births to married or unmarried mothers); (3) Attendant at birth (hospital, doctor or midwife); (4) Number of previous deliveries; and (5) Initiation and extent of prenatal care.

The five configurations are composed primarily (but not exclusively) of independent variables. Since our orientation is toward explicating impacts or dependent variables, the thrust of the following interpretation continues to isolate dysfunctional trends and identify their concomitants.

1. Total Births (Whites, Non-whites) - As indicated in Table IV-A-2, the non-white crude birth rates in both Bolivar and Washington County between 1965 and 1969 were higher than the white crude birth rates. The range for non-whites was between 27.7 and 33.6 per 1,000 population while the range for whites was between 14.1 and 20.1 per 1,000 population. Generally no systematic differences between Bolivar and Washington Counties are apparent with regard to crude birth rates for either whites or non-whites.

2. Birth Status - Births to unmarried mothers in both Bolivar and Washington Counties predominantly occur to non-white mothers. Even though births to unmarried non-white mothers are relatively high in both counties, Washington County over the five-year period tended to have a smaller proportion than did Bolivar County. Also the proportion of births to unmarried mothers was greater within Bolivar County in rural areas than in city areas. Given these observations, the proportion of births to unmarried mothers increased over the five-year period in both Bolivar and Washington Counties. While in Bolivar County there were 41 such births per 100 non-white births in 1965, by 1969 the proportion was 48 births to unmarried mothers per 100 non-white births. In Washington County in 1965, some 34 non-white births per 100 were to unmarried mothers. By 1969 the proportion in Washington County had risen to 40 per 100.

Births to unmarried mothers in both counties accounted for a high proportion of all births to non-white mothers. As well, the statistics show that births to unmarried mothers are more subject to high-risk pregnancy syndrome than births to married mothers. The statistics indicate that in general for each of the five years, and for "Bolivar rural" and Washington County, a greater proportion of low birth weight or premature babies occurred among births to unmarried mothers than to mothers who were married. The major exception to this rule was in "Bolivar city" where statistics based on small numbers of occurrences were ambiguous on this point. However, in examining the pregnancy complication category (available only for 1968 and 1969) the evidence does

TABLE IV-A-2  
STATISTICS ON BIRTH STATUS BY  
RACE, COUNTY AND YEAR

	Bolivar		Birth Rate Per 1,000	Washington		Birth Rate Per 1,000
	Number	Percent		Number	Percent	
1965						
Total White Births *	313	100	16.3	677	100	20.1
With married mothers	307	98		660	98	
With unmarried mothers	6	2		14	2	
Total Non-white Births	1,319	100	33.6	1,383	100	30.3
With married mothers	781	59		907	66	
With unmarried mothers	534	41		473	34	
1966						
Total White Births	297	100	15.0	590	100	18.0
With married mothers	283	95		566	96	
With unmarried mothers	14	5		21	4	
Total Non-white Births	1,207	100	30.7	1,302	100	27.8
With married mothers	697	58		816	63	
With unmarried mothers	507	42		481	37	
1967						
Total White Births	291	100	14.1	586	100	16.5
With married mothers	280	97		569	98	
With unmarried mothers	10	3		13	2	
Total Non-white Births	1,044	100	28.2	1,265	100	29.7
With married mothers	559	54		791	63	
With unmarried mothers	480	46		472	37	
1968						
Total White Births	337	100	17.0	571	100	16.4
With married mothers	326	97		549	96	
With unmarried mothers	11	3		21	4	
Total Non-white Births	1,067	100	30.6	1,155	100	27.7
With married mothers	576	55		686	60	
With unmarried mothers	475	45		466	40	

TABLE IV-A-2  
STATISTICS ON BIRTH STATUS BY  
RACE, COUNTY AND YEAR (CONT.)

	Bolivar		Washington	
	Number	Percent	Number	Percent
1968 (Cont.)				
Total Number of Prenatal Visits**				
Whites-with married mothers	324	100	538	100
None	0	-	7	1
One to six	43	13	99	18
Seven or more	281	87	432	81
Whites-with unmarried mothers	8	100	19	100
None	0	-	3	16
One to six	5	63	8	42
Seven or more	3	37	8	42
Non-white with married mothers	549	100	645	100
None	26	5	41	6
One to six	319	58	385	60
Seven or more	204	37	219	33
Non-white with unmarried mothers	454	100	432	100
None	34	8	46	11
One to six	318	70	285	66
Seven or more	102	22	101	23
Trimester Prenatal Care Initiated				
Total white married mothers with prenatal care	323	100	533	100
1st Trimester	271	84	390	73
2nd Trimester	46	14	106	20
3rd Trimester	6	2	37	7
Total white unmarried mothers with prenatal care	7	100	14	100
1st Trimester	3	43	6	43
2nd Trimester	3	43	7	50
3rd Trimester	1	14	1	7



TABLE IV-A-2  
STATISTICS ON BIRTH STATUS BY  
RACE, COUNTY AND YEAR (CONT.)

	Bolivar		Birth Rate Per 1,000	Washington		Birth Rate Per 1,000
	Number	Percent		Number	Percent	
1968 (Cont.)						
Total non-white married mothers with prenatal care						
1st Trimester	530	100		602	100	
2nd Trimester	269	51		205	34	
3rd Trimester	204	38		247	41	
	57	11		150	25	
Total non-white unmarried mothers with prenatal care	406	100		383	100	
1st Trimester	146	36		88	23	
2nd Trimester	186	46		173	45	
3rd Trimester	74	18		122	32	
Pregnancy Complications						
White - None	302	100		459	100	
married mothers	292	97		441	96	
unmarried mothers	10	3		18	4	
At least one	28	100		86	100	
married mothers	28	100		85	99	
unmarried mothers	0	0		1	1	
Non-white-None	882	100		915	100	
married mothers	486	55		531	58	
unmarried mothers	396	45		384	42	
At least one	83	100		72	100	
married mothers	47	57		43	60	
unmarried mothers	36	43		29	40	
1969						
Total White Births	339	100	19.0	613	100	18.3
with married mothers	325	96		594	97	
with unmarried mothers	14	4		19	3	
Total Non-white Births	1,031	100	29.7	1,206	100	28.9
with married mothers	526	51		719	60	
with unmarried mothers	498	48		482	40	

TABLE IV-A-2  
STATISTICS ON BIRTH STATUS BY  
RACE, COUNTY AND YEAR (CONT.)

	Bolivar		Washington	
	Number	Percent	Number	Percent
1969 (Cont.)				
Total Number of Prenatal Visits	315	100	570	100
Whites with married mothers	0	-	11	2
None	37	12	110	19
One to six	278	88	449	79
Seven or more	12	100	16	100
Whites with unmarried mothers	0	-	3	19
None	9	75	5	31
One to six	3	25	8	50
Seven or more	470	100	684	100
Non-whites with married mothers	13	3	34	5
None	248	53	406	59
One to six	209	44	244	36
Seven or more	429	100	461	100
Non-whites with unmarried mothers	19	4	37	8
None	255	59	302	66
One to six	155	37	122	26
Seven or more				
Trimester Prenatal Care Initiated				
Total white married mothers with prenatal care	320	100	576	100
1st Trimester	276	86	423	73
2nd Trimester	38	12	119	21
3rd Trimester	6	2	34	6
Total white unmarried mothers with prenatal care	13	100	14	100
1st Trimester	4	31	7	50
2nd Trimester	8	62	4	29
3rd Trimester	1	7	3	21

TABLE IV-A-2  
STATISTICS ON BIRTH STATUS BY  
RACE, COUNTY AND YEAR (CONT.)

	Bolivar		Washington	
	Number	Percent	Number	Percent
1969 (Cont.)				
Total non-white married mothers				
with prenatal care				
1st Trimester	451	100	665	100
2nd Trimester	217	48	254	38
3rd Trimester	188	42	300	45
Total non-white unmarried mothers	46	10	111	17
with prenatal care				
1st Trimester	406	100	432	100
2nd Trimester	136	34	120	28
3rd Trimester	202	50	197	46
	68	16	115	26
<u>Pregnancy Complications</u>				
White - None	309	100	510	100
married mothers	298	96	495	97
unmarried mothers	11	4	15	3
At least one	20	100	78	100
married mothers	18	90	78	100
unmarried mothers	2	10	0	-
Non-white-None	941	100	906	100
married mothers	480	51	532	59
unmarried mothers	461	49	374	41
At least one	57	100	59	100
married mothers	31	54	36	61
unmarried mothers	26	46	23	39

\* Due to missing observations, various categories will not seem to total.

\*\*Data on prenatal care and pregnancy complications not available for 1965, 1966, 1967 nor 1970.

not indicate that unmarried mothers experienced pregnancy complications more frequently than married mothers.

In terms of prenatal care, the data show that very few mothers in either county were without some prenatal care, regardless of birth status. The situation is somewhat different in terms of intensity of prenatal care and trimester initiated. In 1968 and 1969 (when prenatal care statistics were available), a definite pattern emerges. In general, non-whites had fewer prenatal visits, initiated later in pregnancy, than did whites. As expected, unmarried mothers had fewer prenatal visits, initiated later in pregnancy, than did mothers who were married. Given these observations, in both counties (and both years 1968 and 1969), married non-white mothers had more visits initiated earlier in pregnancy than did unmarried non-white mothers.

The final conclusion that can be drawn from the statistics on birth status is with regard to socio-economic status (SES). The only statistics available on SES are educational attainment of mothers and fathers provided for 1968 and 1969. As suggested by Table IV-A-3, white fathers in both counties tend to have a higher educational attainment level than non-white fathers. In 1968 and 1969, the median education levels for white fathers in Bolivar County were 13.2 and 13.6 years at school, respectively. In contrast, non-white fathers' median education (in Bolivar County) in 1968 was 9.8 years and 10.1 years in 1969 (less than high school education). Also, fathers in Bolivar County tended to have slightly higher educational level than fathers in Washington County, true for all races. A similar configuration emerges from examining the median education of mothers. White mothers in Bolivar County (in terms of medians) tended to have completed high school while the median level of education of white mothers in Washington County was close (11.8 and 11.8 years - 1968 and 1969, respectively) to high school completion. Non-white mothers in both counties had median education below the tenth grade. In terms of birth status, unwed non-white mothers tended in both counties to be slightly lower in educational attainment than non-white married mothers.

3. Attendant at Birth - As indicated in the methodology section of this report, attendant at birth (specifically midwifery) is an important factor in rural areas where hospital-based obstetric facilities may be unavailable to a large sector of the population. Midwives, however, are available in remote areas and can perform deliveries at the home of the mother. A distinction should be made here between the midwife who has received specific training in this "healing art" as licensed and supervised by the State Health Department, and the folk-style midwife. The latter receives no training and is neither licensed nor supervised by the State Health Department. The statistics presented on birth attendance reflect midwives licensed and supervised by the State Health Department. Statistics regarding folk-style midwifery are unfortunately difficult to obtain, because the births tend either to be unregistered or registered only after the baby is discovered by a public health official.

TABLE IV-A-3  
 MEDIAN EDUCATION OF FATHERS AND MOTHERS AND MOTHERS  
 OUT OF WEDLOCK AND MEDIAN AGE OF MOTHER AT BIRTH  
 BOLIVAR AND WASHINGTON COUNTIES  
 1968-1969

		Bolivar	Washington
		Grade	Grade
Median education - father			
1968	White	13.2	11.9
	Nonwhite	9.8	8.9
1969	White	13.6	11.9
	Nonwhite	10.1	9.5
Median education - mother			
1968	White	12.2	11.8
	Nonwhite	9.2	9.2
	Unmarried	8.2	9.1
1969	White	12.2	11.8
	Nonwhite	9.4	9.7
	Unmarried	9.1	9.6
Median age of mother at birth		<u>Age</u>	<u>Age</u>
1968	White	23.3	24.0
	Nonwhite	21.0	21.7
1969	White	23.4	23.3
	Nonwhite	20.0	21.7



Several important findings bear on attendant at birth. First, statistics indicate that midwifery in the two counties is a practice almost exclusively limited to the non-white population. Secondly, midwifery appears to be a vanishing phenomenon in both counties - particularly Bolivar County. In Bolivar County in 1965, some 41 percent of the non-white births were attended by midwives. By 1969, only 14 percent of the non-white births were attended by midwives in Bolivar County. In Washington County, decline in midwifery among non-white births has not been as steep. In 1965, 27 percent of the non-white births were attended by midwives in Washington County. In 1966, however, the percentage of midwife attended births increased to 33 percent but declined to 21 percent by 1969 in Washington County. To the extent the decline in midwifery reflects a better access to hospital obstetric wards by non-whites in remote rural areas in Bolivar and Washington Counties, the trend could be considered functional rather than dysfunctional. However, the few statistics we have compiled on attendant at birth in relationship to the high-risk pregnancy syndrome indicate no evidence to suggest that births attended by midwives are any more dangerous to the health status of the child and mother than births attended by a physician. On the contrary, the statistics suggest fewer premature births and pregnancy complications among births attended by midwives than among those attended by physicians and hospitals. This finding is, to some extent, an artifact since, in a relatively organized situation, known difficult pregnancies would more likely be attended in a hospital, rather than by a midwife. In addition, if a complication arose during pregnancy, a physician would be consulted.

4. Number of Previous Deliveries - In attempting to explicate the high-risk pregnancy syndrome, the mother's previous pregnancy history should be taken into account. Unfortunately, information on previous deliveries is not available prior to 1968. The information for 1968 and 1969 reveals that, in general for both counties, the parity (number of previous deliveries) is significantly greater among non-white mothers than among white mothers. For example, in Bolivar County, some 28 percent of the non-white mothers in 1968 and 26 percent in 1969 had five or more previous deliveries. This is contrasted to 6 percent in both 1968 and 1969 for white mothers with five or more previous deliveries. The same situation also prevailed in Washington County.

Table IV-A-5 examines the relationship of parity to other parts of the high-risk pregnancy syndrome. There does not appear to be any significant relationship between the number of low birth weight babies (signifying in part - prematurity) and the previous number of deliveries. Basically, the percentage of premature births does not systematically deviate to any great extent between low and high parity mothers. A similar configuration exists between parity and pregnancy complications. There is no systematic pattern in either county for either year to suggest that any one parity group is subject more frequently to pregnancy complications than other parity

TABLE IV-A-4  
SELECTED BIRTH STATISTICS  
BY RACE AND COUNTY  
1965-1969

	Bolivar		Washington	
	Number	Percent	Number	Percent
1965				
Total Births	1633	100	2060	100
White	313	19	677	33
Non-white	1319	81	1383	67
Birth Weight-Whites*				
Mature weight	313	100	674	100
Low birth weight	295	94	639	95
	18	6	35	5
Birth Weight-Non-white	1314	100	1380	100
Mature weight	1163	89	1188	86
Low birth weight	151	11	192	14
Attendants at Birth-White	313	100	677	100
Hospital or doctor	309	99	676	100
Midwife or other	4	1	1	0
Attendants at Birth-Non-white	1316	100	1380	100
Hospital or doctor	782	59	1003	73
Midwife or other	535	41	380	27
Mother's Age-under 18	230	100	243	100
White	19	8	35	14
Non-white	211	92	208	86
Mother's Age-over 35	150	100	170	100
White	21	14	43	25
Non-white	129	86	127	75
Total in High Risk Pregnancy				
Ages (under 18, over 35)	380	100	413	100
White	40	11	78	19
Non-white	340	89	335	81

\* Columns may not sum to total because of information not available.

TABLE IV-A-4  
SELECTED BIRTH STATISTICS  
BY RACE AND COUNTY  
1965-1969 (Cont.)

	Bolivar		Washington	
	Number	Percent	Number	Percent
1966				
<u>Total Births</u>				
White	1507	100	1892	100
Non-white	297	20	590	31
	1207	80	1302	69
<u>Birth Weight-Whites *</u>				
Mature weight	297	100	587	100
Low birth weight	281	95	553	94
	16	5	34	6
<u>Birth Weight-Non-white</u>				
Mature weight	1204	100	1297	100
Low birth weight	1059	88	1142	88
	145	12	155	12
<u>Attendants at Birth-White</u>				
Hospital or doctor	297	100	590	100
Midwife or other	293	99	584	99
	4	1	6	1
<u>Attendants at Birth-Non-white</u>				
Hospital or doctor	1205	100	1300	100
Midwife or other	705	59	869	67
	500	41	431	33
<u>Mother's Age-under 18</u>				
White	230	100	253	100
Non-white	18	8	37	15
	212	92	216	85
<u>Mother's Age-over 35</u>				
White	138	100	145	100
Non-white	11	8	36	25
	127	92	109	75
<u>Total in High Risk Pregnancy</u>				
Ages (under 18, over 35)	368	100	398	100
White	29	8	73	18
Non-white	339	92	325	82

\* Columns may not sum to total because of information not available.

TABLE IV-A-4  
SELECTED BIRTH STATISTICS  
BY RACE AND COUNTY  
1965-1969 (Cont.)

	Bolivar		Washington	
	Number	Percent	Number	Percent
1967				
<u>Total Births</u>				
White	1338	100	1851	100
Non-white	291	22	586	32
	1044	78	1265	68
<u>Birth Weight-Whites *</u>				
Mature weight	290	100	582	100
Low birth weight	270	93	550	95
	20	7	32	5
<u>Birth Weight-Non-white</u>				
Mature weight	1039	100	1263	100
Low birth weight	917	88	1105	87
	122	12	158	13
<u>Attendants at Birth-White</u>				
Hospital or doctor	290	100	582	100
Midwife or other	286	99	581	100
	4	1	1	0
<u>Attendants at Birth-Non-white</u>				
Hospital or doctor	1043	100	1263	100
Midwife or other	689	66	873	69
	357	34	390	31
<u>Mother's Age-under 18</u>				
White	206	100	247	100
Non-white	24	12	33	13
	182	88	214	87
<u>Mother's Age-over 35</u>				
White	105	100	138	100
Non-white	10	10	35	25
	95	90	103	75
<u>Total in High Risk Pregnancy</u>				
Ages (under 18, over 35)	311	100	385	100
White	34	11	68	18
Non-white	277	89	317	82

\* Columns may not sum to total because of information not available.

TABLE IV-A-4  
SELECTED BIRTH STATISTICS  
BY RACE AND COUNTY  
1965-1969 (Cont.)

	Bolivar		Washington	
	Number	Percent	Number	Percent
1968				
<u>Total Births</u>				
White	1404	100	1726	100
Non-white	337	24	571	33
	1067	76	1155	67
<u>Birth Weight-Whites *</u>				
Mature weight	337	100	570	100
Low birth weight	302	90	520	91
	35	10	50	9
<u>Birth Weight-Non-white</u>				
Mature weight	1051	100	1152	100
Low birth weight	932	89	1007	87
	119	11	145	13
<u>Attendants at Birth-White</u>				
Hospital or doctor	337	100	571	100
Midwife or other	337	100	566	99
	0	0	5	1
<u>Attendants at Birth-Non-white</u>				
Hospital or doctor	1064	100	1154	100
Midwife or other	824	77	856	74
	240	23	298	26
<u>Mother's Age-under 18</u>				
White	215	100	228	100
Non-white	19	9	30	13
	196	81	198	87
<u>Mother's Age over 35</u>				
White	96	100	135	100
Non-white	14	15	35	26
	82	85	100	74
<u>Total in High Risk Pregnancy</u>				
<u>Ages (under 18, over 35)</u>				
White	311	100	363	100
Non-white	33	11	65	18
	278	89	298	82

\* Columns may not sum to total because of information not available.



TABLE IV-A-4  
SELECTED BIRTH STATISTICS  
BY RACE AND COUNTY  
1965-1969 (Cont.)

	Bolivar		Washington	
	Number	Percent	Number	Percent
<b>1968 (Cont.)</b>				
<u>Number of Previous Deliveries *</u>				
White				
None	337	100	570	100
One	144	43	180	31
Two	81	24	148	26
Three	45	13	108	19
Four	26	8	67	12
Five	21	6	27	5
Five or more	20	6	40	7
Non-whites				
None	1048	100	1153	100
One	299	29	313	27
Two	198	19	195	17
Three	110	10	150	13
Four	75	7	104	9
Five to nine	78	7	61	5
10 or more	198	19	241	21
	90	9	89	8
<u>Pregnancy Complications</u>				
Whites				
None	330	100	545	100
At least one	302	92	459	84
Non-whites				
None	28	8	86	16
At least one	966	100	988	100
	883	91	916	93
	83	9	72	7
<u>Number of Prenatal Visits</u>				
Whites				
None	332	100	557	100
One-six	0	0	10	2
Seven or more	48	14	107	19
	284	86	440	79

\* Column may not sum to total because of information not available.

TABLE IV-A-4  
SELECTED BIRTH STATISTICS  
BY RACE AND COUNTY  
1965-1969 (Cont.)

	Bolivar		Washington	
	Number	Percent	Number	Percent
Non-whites				
None	1006	100	1078	100
One-six	60	6	87	8
Seven or more	639	64	671	62
	307	30	320	30
<u>Trimester Prenatal Visit Started *</u>				
White				
1st Trimester	330	100	547	100
2nd Trimester	274	83	396	72
3rd Trimester	49	15	113	21
Non-white				
1st Trimester	7	2	38	7
2nd Trimester	938	100	985	100
3rd Trimester	415	44	293	30
	391	42	420	43
	132	14	272	27
1969				
<u>Total Births</u>	1370	100	1819	100
White	339	25	613	34
Non-white	1031	75	1206	66
<u>Birth Weight-whites</u>				
Mature weight	339	100	613	100
Low birth weight	318	94	564	92
	21	6	49	8
<u>Birth Weight-Non-white</u>				
Mature weight	1024	100	1201	100
Low birth weight	909	89	1061	88
	115	11	140	12
<u>Attendants at Birth-white</u>				
Hospital or doctor	339	100	613	100
Midwife or other	339	100	610	100
	-	-	3	-

\* Columns may not sum to total because of information not available.

TABLE IV-A-4  
SELECTED BIRTH STATISTICS  
BY RACE AND COUNTY  
1965-1969 (Cont.)

	Bolivar		Washington	
	Number	Percent	Number	Percent
1969 (Cont.)				
Attendants at Birth-Non-white *				
Hospital or doctor	1029	100	1205	100
Midwife or other	883	86	957	79
	146	14	248	21
Mother's Age-under 18	199	100	225	100
White	13	7	39	17
Non-white	186	93	186	83
Mothers over 35	76	100	105	100
White	11	14	24	23
Non-white	65	86	81	77
Total in High Risk Pregnancy				
Ages (under 18, over 35)	275	100	330	100
White	24	9	63	19
Non-white	251	91	267	81
Number of Previous Deliveries *				
White	339	100	611	100
None	131	39	219	36
One	93	27	157	26
Two	45	13	108	18
Three	36	11	73	12
Four	15	4	26	4
Five or more	19	6	28	4
Non-whites				
None	984	100	1193	100
One	278	28	332	28
Two	177	18	224	19
Three	128	13	154	13
	84	9	113	9

\* Columns may not sum to total because of information not available.

TABLE IV-A-4  
SELECTED BIRTH STATISTICS  
BY RACE AND COUNTY  
1965-1969 (Cont.)

	Bolivar		Washington	
	Number	Percent	Number	Percent
1969 (Cont.)				
Four	58	6	68	6
Five to nine	183	19	226	19
10 or more	76	7	76	6
Pregnancy Complications*				
Whites	329	100	588	100
None	309	94	510	87
Some	20	6	78	13
Non-whites	999	100	965	100
None	942	94	906	94
Some	57	6	59	6
Number of Prenatal Visits				
Whites	327	100	586	100
None	0	0	14	2
One to Six	46	14	115	20
Seven or more	281	86	457	78
Non-whites	900	100	1146	100
None	32	4	71	6
One to Six	504	56	709	62
Seven or more	364	40	366	32
Trimester Prenatal Visit				
Started-White	333	100	590	100
1st Trimester	280	84	430	73
2nd Trimester	46	14	123	21
3rd Trimester	7	2	37	6
Non-white	858	100	1098	100
1st Trimester	354	41	374	34
2nd Trimester	390	46	498	45
3rd Trimester	114	13	226	21

\* Columns may not sum to total because of information not available.

TABLE IV-A- 5  
PREVIOUS DELIVERIES BY SELECTED HIGH  
RISK PREGNANCY SYNDROME FACTORS  
BOLIVAR AND WASHINGTON COUNTIES

<u>1968</u>	Bolivar		Washington	
	Number	Percent	Number	Percent
Total				
By birth status and race and race				
White married mothers	326	100	548	100
No previous deliveries	134	41	162	30
1 or 2	125	39	252	46
3 or 4	47	14	94	17
5 or more	20	6	40	7
White unmarried mothers	11	100	22	100
No previous deliveries	10	91	18	82
1 or more	1	9	4	18
Nonwhite married mothers	570	100	684	100
No previous deliveries	97	17	97	14
1 or 2	160	28	204	30
3 or 4	91	16	125	18
5 or more	222	39	258	38
Nonwhite unmarried mothers	475	100	468	100
No previous deliveries	202	42	216	46
1 or 2	147	31	140	30
3 or 4	61	13	40	9
5 or more	65	14	72	15
Previous deliveries by birth weight				
<u>No previous deliveries</u>	438	100	492	100
Low birth rate	43	10	65	13
Mature birth weight	395	90	427	87
<u>1 or 2 previous deliveries</u>	431	100	601	100
Low birth rate	50	12	68	11
Mature birth weight	381	88	533	89
<u>3 or 4 previous deliveries</u>	198	100	259	100
Low birth weight	20	10	25	10
Mature birth weight	178	90	234	90
<u>5 or more previous deliveries</u>	305	100	368	100
Low birth weight	40	13	37	10
Mature birth weight	265	87	331	90
Previous delivery and complication				
<u>No previous deliveries</u>	421	100	444	100
None	385	91	403	91
Some	36	9	41	9



TABLE IV-A-5  
PREVIOUS DELIVERIES BY SELECTED HIGH  
RISK PREGNANCY SYNDROME FACTORS  
BOLIVAR AND WASHINGTON COUNTIES--Cont.

<u>1968--Cont.</u>	Bolivar		Washington	
	Number	Percent	Number	Percent
<u>1 or 2 previous deliveries</u>	400	100	536	100
None	368	92	470	88
Some	32	8	66	12
<u>3 or 4 previous deliveries</u>	186	100	231	100
None	177	95	204	88
Some	9	5	27	12
<u>5 or more previous deliveries</u>	277	100	319	100
None	244	88	295	92
Some	33	12	24	8
<u>1969</u>				
Total				
By birth status and race				
White married mothers	325	100	592	100
No previous deliveries	122	37	200	33
1 or 2	136	42	265	45
3 or 4	49	15	99	17
5 or more	18	6	28	5
White unmarried mothers	14	100	19	100
No previous deliveries	9	64	19	100
1 or more	5	36	0	0
Nonwhite married mothers	505	100	715	100
No previous deliveries	67	13	109	15
1 or 2	152	30	232	33
3 or 4	94	19	135	19
5 or more	192	38	239	33
Nonwhite unmarried mothers	478	100	477	100
No previous deliveries	211	44	223	47
1 or 2	152	32	146	31
3 or 4	48	10	45	9
5 or more	67	14	63	13
Previous deliveries by birth weight				
<u>No previous deliveries</u>	407	100	550	100
Low birth weight	29	7	59	11
Mature birth weight	378	93	491	89

TABLE IV-A-5  
PREVIOUS DELIVERIES BY SELECTED HIGH  
RISK PREGNANCY SYNDROME VACTORS  
BOLIVAR AND WASHINGTON COUNTIES--Cont.

<u>1969--Cont.</u>	Bolivar		Washington	
	Number	Percent	Number	Percent
<u>1 or 2 previous deliveries</u>	441	100	643	100
Low birth weight	47	11	73	11
Mature birth weight	394	89	570	89
<u>3 or 4 previous deliveries</u>	193	100	279	
Low birth weight	22	11	23	8
Mature birth weight	171	89	256	92
<u>5 or more previous deliveries</u>	277	100	328	100
Low birth weight	36	13	34	10
Mature birth weight	241	87	294	90
Previous delivery and complication				
<u>No previous deliveries</u>	401	100	471	100
None	379	95	420	89
Some	22	5	51	11
<u>1 or 2 previous deliveries</u>	431	100	558	100
None	412	95	517	93
Some	19	5	41	7
<u>3 or 4 previous deliveries</u>	189	100	245	100
None	177	94	223	91
Some	12	6	22	9
<u>5 or more previous deliveries</u>	263	100	264	100
None	241	92	245	93
Some	22	8	19	7

TABLE IV-A-6  
BIRTH STATUS BY ATTENDANTS AT BIRTH  
BOLIVAR RURAL AND CITY AND WASHINGTON COUNTY  
1965-1969

	Bolivar Rural		Bolivar City		Washington	
	Number	Percent	Number	Percent	Number	Percent
1965						
Total Births*	1318		315		2060	
With married mothers	858	100	231	100	1567	100
In hospital or doctor	570	66	199	86	1355	86
Midwife or other	288	34	32	14	212	14
With unmarried mothers	456	100	84	100	487	100
In hospital or doctor	264	58	58	69	319	66
Midwife or other	192	42	26	31	168	34
1966						
Total Births	1204		300		1892	
With married mothers	761	100	220	100	1383	100
In hospital or doctor	515	68	194	88	1143	83
Midwife or other	246	32	26	12	240	17
With unmarried mothers	441	100	80	100	503	100
In hospital or doctor	237	54	52	65	305	61
Midwife or other	204	46	28	35	198	39
1967						
Total Births	1032		316		1851	
With married mothers	619	100	221	100	1360	100
In hospital or doctor	458	74	203	92	1147	84
Midwife or other	161	26	18	8	213	16
With unmarried mothers	398	100	95	100	485	100
In hospital or doctor	246	62	68	72	307	63
Midwife or other	152	38	27	28	178	37

\* Columns may not sum to total because of information not available

TABLE IV-A-6  
BIRTH STATUS BY ATTENDANTS AT BIRTH  
BOLIVAR RURAL AND CITY AND WASHINGTON COUNTY  
1965-1969 (Cont.)

	Bolivar Rural		Bolivar City		Washington	
	Number	Percent	Number	Percent	Number	Percent
1968						
Total Births*	1068				1726	
With married mothers	646	100	336	100	1235	100
In hospital or doctor	545	84	245	93	1077	87
Midwife or other	101	16	18	7	158	13
With unmarried mothers	419	100	73	100	490	100
In hospital or doctor	318	76	53	73	345	70
Midwife or other	101	24	20	27	145	30
1969						
Total Births	1004		366		1819	
With married mothers	590	100	263	100	1316	100
In hospital or doctor	532	90	246	94	1192	91
Midwife or other	58	10	17	6	124	9
With unmarried mothers	413	100	102	100	502	100
In hospital or doctor	355	86	89	87	375	75
Midwife or other	58	14	13	13	127	25

\* Columns may not sum to total because of information not available

TABLE IV-A-7  
BIRTH STATUS BY BIRTH WEIGHT  
BOLIVAR RURAL AND CITY AND WASHINGTON COUNTY  
1965-1969

	Bolivar Rural		Bolivar City		Washington	
	Number	Percent	Number	Percent	Number	Percent
1965						
Total Births *	1315				2060	100
With married mothers	857	100	315		1567	100
Mature weights	784	91	213	100	1407	90
Low birth weights	73	9	18	8	160	10
With unmarried mothers	455	100	84	100	487	100
Mature weights	393	86	68	81	420	86
Low birth weights	62	14	16	19	67	14
1966						
Total Births	1204		300		1892	100
With married mothers	761	100	219	100	1382	91
Mature weights	691	91	199	91	1254	9
Low birth weights	70	9	20	9	128	100
With unmarried mothers	441	100	80	100	502	88
Mature weights	375	85	75	94	441	12
Low birth weights	66	15	5	6	61	
1967						
Total Births	1022		316		1851	100
With married mothers	618	100	221	100	1360	91
Mature weights	554	90	203	92	1237	9
Low birth weights	64	10	18	8	123	100
With unmarried mothers	395	100	95	100	485	86
Mature weights	345	87	85	89	418	14
Low birth weights	50	13	10	11	67	

\*Columns may not sum to total because of information not available on birth weight



TABLE IV-A-7  
BIRTH STATUS BY BIRTH WEIGHT  
BOLIVAR RURAL AND CITY AND WASHINGTON COUNTY  
1965-1969 (Cont.)

	Bolivar Rural		Bolivar City		Washington	
	Number	Percent	Number	Percent	Number	Percent
1968						
Total Births *	1068				1726	
With married mothers	639	100	336	100	1235	100
Mature weights	566	88	239	91	1107	90
Low birth weights	73	12	24	9	128	10
With unmarried mothers	415	100	71	100	487	100
Mature weights	370	89	59	83	420	86
Low birth weights	45	11	12	17	67	14
1969						
Total Births	1004		366		1819	
With married mothers	589	100	262	100	1313	100
Mature weights	532	90	241	92	1184	90
Low birth weights	57	10	21	8	129	10
With unmarried mothers	411	100	101	100	501	100
Mature weights	364	89	90	89	441	88
Low birth weights	47	11	11	11	60	12

\*Columns may not sum to total because of N.A.'s on birth weight

groups. The only systematic relationship to be found with regard to parity and high-risk pregnancy syndrome is with the birth status variable for non-whites. The statistics indicate that for 1968 and 1969, and for both counties, more than 50 percent of the non-white unmarried mothers had one or more previous deliveries. In fact, in both counties and both years, approximately one-quarter of the births to unmarried non-white mothers was accounted for by mothers with three or more previous deliveries.

5. Prenatal Care - Similar to previously discussed delivery data, prenatal care data are not available prior to 1968. Very few mothers in either county reported having no prenatal care. Also non-white mothers tended to have fewer prenatal visits, and to begin these visits later in pregnancy than did white mothers. Finally, among non-white mothers, fewer visits (generally late in pregnancy) were reported for unmarried mothers, as opposed to those who were married. Given these observations, the relationship between prenatal care and dysfunctional factors in the birth process such as prematurity and pregnancy complications need to be examined. First, prematurity and pregnancy complications are directly related. As shown by Table IV-A-8, there is a higher proportion of low birth weights among mothers with pregnancy complications than among those with no pregnancy complications. This generalization is sustained in both Bolivar and Washington Counties for 1968 and 1969.

There appears to be a general relationship between the number of prenatal visits and the occurrence of prematurity. The tendency is for mothers with no prenatal care visits or with few visits (1 to 6) to deliver premature babies in a slightly higher proportion than mothers with seven or more visits. However, the same kind of configuration is not sustained in terms of a trimester in which prenatal visits were initiated. In general, there is no systematic difference in terms of delivering low birth weight babies between mothers who commence their prenatal care in the first trimester of pregnancy and those who delayed prenatal care into the second or third trimester of pregnancy.

The statistics on prenatal care and pregnancy complications suggest no systematic pattern in Bolivar County but a rather peculiar pattern in Washington County. Basically in Washington County, for both 1968 and 1969, the greater number of visits and the earlier these visits started, the greater the frequency of pregnancy complications. This simply suggests that mothers undergoing difficult pregnancies get prenatal care early in pregnancy and more frequently during pregnancy.

### Morbidity

In this section, three sets of data will be examined that reflect morbidity incidences and prevalence in Bolivar and Washington County. The first set of data is the reportable disease registry for 1968, 1969 and 1970.

TABLE IV-A-8  
BIRTH WEIGHT AND ATTENDANT AT BIRTH  
BOLIVAR RURAL AND CITY  
WASHINGTON COUNTY  
1965-1969

	Bolivar rural		Bolivar city		Washington	
	Number	Percent	Number	Percent	Number	Percent
<u>1965</u>						
Birth weight by attendant at birth - Total	1,316		315		2,060	
Birth attended by						
Hospital or doctor	835	100	257	100	1,679	100
Low birth weight	97	12	31	12	177	10
Mature birth weight	738	88	226	88	1,502	90
Birth attended by						
Midwife	481	100	58	100	381	100
Low birth weight	39	8	3	5	52	14
Mature birth weight	442	92	55	95	329	86
<u>1966</u>						
Birth weight by attendant at birth - Total	1,204		299		1,890	
Birth attended by						
Hospital or doctor	753	100	246	100	1,453	100
Low birth weight	96	13	22	9	150	10
Mature birth weight	657	87	224	91	1,303	90
Birth attended by						
Midwife	451	100	53	100	437	100
Low birth weight	40	9	3	6	40	9
Mature weight	411	91	50	94	397	91
<u>1967</u>						
Birth weight by attendant at birth - Total	1,018		316		1,851	
Birth attended by						
Hospital or doctor	702	100	271	100	1,458	100
Low birth weight	89	13	25	9	142	10
Mature birth weight	613	87	246	91	1,316	90
Birth attended by						
Midwife	316	100	45	100	393	100
Low birth weight	25	8	3	7	48	12
Mature birth weight	291	92	42	93	345	88

TABLE IV-A-8  
BIRTH WEIGHT AND ATTENDANT AT BIRTH --Cont.  
BOLIVAR RURAL AND CITY  
WASHINGTON COUNTY  
1965-1969

	Bolivar rural		Bolivar city		Washington	
	Number	Percent	Number	Percent	Number	Percent
<u>1968</u>						
Birth attended by						
Hospital or doctor	854	100	298	100	1,421	100
Low birth weight	105	12	36	12	164	12
Mature birth weight	749	88	262	88	1,257	88
Birth attended by						
Midwife	203	100	36	100	302	100
Low birth weight	14	7	0	0	31	10
Mature birth weight	189	93	36	100	271	90
Complications at birth and						
birth attendant						
Hospital or doctor	835	100	294	100	1,277	100
No complications	753	90	267	91	1,126	88
Some complications	82	10	27	9	151	12
Midwife and other	145	100	22	100	256	100
No complications	144	99	21	96	249	97
Some complications	1	1	1	4	7	3
Birth weight and age of						
mother at birth						
<u>Under 18</u>	173	100	42	100	228	100
Low birth weight	18	10	4	10	43	19
Mature birth weight	155	90	38	90	185	81
<u>Over 35</u>	80	100	16	100	135	100
Low birth weight	10	12	1	6	14	10
Mature birth weight	70	88	15	94	121	90
Complications at birth and						
birth weight						
No complications	889	100	287	100	1,374	100
Low birth weight	85	10	27	9	132	10
Mature birth weight	804	90	260	91	1,242	90
Some complications	81	100	28	100	158	100
Low birth weight	21	26	9	32	28	18
Mature birth weight	60	74	19	68	130	82

TABLE IV-A-8  
BIRTH WEIGHT AND ATTENDANT AT BIRTH --Cont.  
BOLIVAR RURAL AND CITY  
WASHINGTON COUNTY  
1965-1969

	Bolivar rural		Bolivar city		Washington	
	Number	Percent	Number	Percent	Number	Percent
<u>1969</u>						
Birth attended by						
Hospital or doctor	886	100	334	100	1,565	100
Low birth weight	94	11	32	10	165	10
Mature birth weight	792	89	302	90	1,400	90
Birth attended by						
Midwife or other	114	100	30	100	250	100
Low birth weight	10	9	0	0	24	10
Mature birth weight	104	91	30	100	226	90
Complications birth and birth attendant						
Hospital or doctor	863	100	330	100	1,359	100
No complications	799	93	318	96	1,223	90
Some complications	64	7	12	4	136	10
Midwife or other	106	100	29	100	194	100
No complications	105	99	29	100	193	99
Some complications	1	1	0	0	1	1
Birth weight and age of mother at birth						
<u>Under 18</u>	152	100	47	100	225	100
Low birth weight	17	11	4	8	27	12
Mature birth weight	135	89	43	92	198	88
<u>Over 35</u>	60	100	16	100	105	100
Low birth weight	10	17	0	0	6	6
Mature birth weight	50	83	16	100	99	94
Complications at birth and birth weight						
No complications	902	100	345	100	1,414	100
Low birth weight	87	10	30	9	115	8
Mature birth weight	815	90	315	91	1,299	92
Some complications	65	100	12	100	137	100
Low birth weight	14	22	2	17	25	18
Mature birth weight	51	78	10	83	112	82



## PRENATAL VISITS BY BIRTH WEIGHT, TRIMESTER AND COMPLICATIONS

## BOLIVAR AND WASHINGTON COUNTIES

1968 - 1969

	Bolivar		Washington	
	Number	Percent	Number	Percent
1968				
<u>Number of Prenatal Visits and Birth Weight</u>				
No visits	60	100	95	100
Low birth weight	8	13	17	18
Mature birth weight	52	87	78	82
One to six visits	677	100	777	100
Low birth weight	91	13	119	15
Mature birth weight	586	87	658	85
Seven or more visits	588	100	760	100
Low birth weight	46	8	51	7
Mature birth weight	542	92	709	93
<u>Trimester of Visit and Birth Weight</u>				
1st Trimester	684	100	689	100
Low birth weight	66	10	60	9
Mature birth weight	618	90	629	91
2nd Trimester	433	100	532	100
Low birth weight	59	14	73	14
Mature birth weight	374	86	459	86
3rd Trimester	138	100	310	100
Low birth weight	12	9	38	12
Mature birth weight	126	91	272	88

TABLE IV-A-9  
 PRENATAL VISITS BY BIRTH WEIGHT, TRIMESTER AND COMPLICATIONS  
 BOLIVAR AND WASHINGTON COUNTIES

1968-1969 (Cont.)

	Bolivar		Washington	
	Number	Percent	Number	Percent
1968 (Cont.)				
<u>Number of Prenatal Visits</u>				
<u>and Pregnancy Complications</u>				
No visits	55	100	79	100
No complications	53	96	76	96
Some complications	2	4	3	4
One to six visits	630	100	709	100
No complications	576	91	654	92
Some complications	54	9	55	8
Seven or more visits	564	100	670	100
No complications	513	91	570	85
Some complications	51	9	100	15
<u>Trimester of Prenatal Visits</u>				
<u>and Pregnancy Complications</u>				
1st Trimester	649	100	633	100
No complications	595	92	539	85
Some complications	54	8	94	15
2nd Trimester	418	100	457	100
No complications	376	90	416	91
Some complications	42	10	41	9
3rd Trimester	130	100	283	100
No complications	121	93	265	94
Some complications	9	7	18	6

TABLE IV-A-9  
 PRENATAL VISIT BY BIRTH WEIGHT  
 TRIMESTER AND COMPLICATIONS  
 BOLIVAR AND WASHINGTON COUNTIES  
 1968 - 1969 (Cont )

	Bolivar		Washington	
	Number	Percent	Number	Percent
1969				
<u>Number of Prenatal and Birth Weight</u>				
No visits	32	100	85	100
Low birth weight	3	9	16	19
Mature birth weight	29	91	69	81
One to six visits	547	100	821	100
Low birth weight	62	11	107	13
Mature birth weight	485	89	714	87
Seven or more visits	644	100	822	100
Low birth weight	54	8	58	7
Mature birth weight	590	92	764	93
<u>Trimester of Visit and Birth Weight</u>				
1st Trimester	632	100	803	100
Low birth weight	62	10	77	10
Mature birth weight	570	90	726	90
2nd Trimester	435	100	619	100
Low birth weight	41	9	67	11
Mature birth weight	394	91	552	89
3rd Trimester	121	100	263	100
Low birth weight	8	7	28	11
Mature birth weight	113	93	235	89

TABLE IV-A-9  
 PRENATAL VISIT BY BIRTH WEIGHT  
 TRIMESTER AND COMPLICATIONS  
 BOLIVAR AND WASHINGTON COUNTIES  
 1968 - 1969 (Cont.)

	Bolivar		Washington	
	Number	Percent	Number	Percent
1969 (Cont.)				
<u>Number of Prenatal Visit</u> <u>and Pregnancy Complications</u>				
No visits	30	100	72	100
No complications	29	97	69	96
Some complications	1	3	3	4
One to six visits	539	100	713	100
No complications	511	95	675	95
Some complications	28	5	38	5
Seven or more visits	629	100	696	100
No complications	584	93	604	87
Some complications	45	7	92	13
<u>Trimester or Prenatal Visits</u> <u>and Pregnancy Complications</u>				
1st Trimester	622	100	690	100
No complications	581	93	601	87
Some complications	41	7	89	13
2nd Trimester	423	100	517	100
No complications	395	93	482	93
Some complications	28	7	35	7
3rd Trimester	120	100	235	100
No complications	115	96	227	96
Some complications	5	4	8	3

\*Some percentages may not equal 100 due to rounding

The major statistics to be extracted from this source pertain to venereal diseases.<sup>5</sup> The reportable disease registry contains information on new incidences of tuberculosis. However, we have obtained some rather detailed information on the prevalence of tuberculosis for a six-year period, 1965-1970. Therefore, the prevalence information will be examined in detail rather than relying on incidence data from the reportable disease registry (which fail to provide a complete portrayal of tuberculosis). A third set of data related to tuberculosis control but also pertaining to case finding and control of diabetes is the special files we have been able to obtain on these two diseases. The special file on tuberculosis relates to TB Chemoprophylaxis treatment cases that were either started or terminated in 1970 and 1971. An examination of this file will provide some insight into the tuberculosis control programs being undertaken by the State Health Department. The second special file which relates to diabetes case-finding is available for 1966 and 1967.

#### Special Caveats on Reportable Diseases Registry

Whenever we analyze the reportable disease registry, irrespective of site, we stress that caution must be exercised in interpreting these data because of certain built-in biases. The following caveats should be noted by the reader:

1. Reportable disease registries reflect incidence of diseases. As such, they do not necessarily indicate the prevalence of a disease within a community.
2. Reportable diseases are subject to under-reporting. This is particularly the situation with venereal diseases. In general, a situation of under-reporting can be to some extent detected from the source of the report. In situations where reports come predominantly from private physicians as opposed to Health Department or other institutional sources, some likelihood exists of under-reporting. Even though physicians are required to report venereal diseases, because of the stigma associated with a venereal disease, the physician may choose to protect his patient by concealing the incident. This reporting bias would tend to reduce the VD rate of higher socio-economic groups who deal with private physicians rather than public agencies.

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5. The Mississippi State Health Department reported 750 cases of influenza and 300 cases of strep throat in Bolivar County in 1970 (no influenza and 90 cases of strep throat in 1969). The computer tapes from which information was extracted contained no data on either influenza or strep throat. Inquiries made to the State Health Department failed to yield additional information about influenza or strep throat.



3. For certain diseases such as influenza or strep throat, the likelihood is that the incidence would be related to persons who were diagnosed and treated by public health officials rather than private physicians. In these situations, many cases reported may, in fact, reflect intensive case-finding efforts by public health officials.

### Venereal Diseases

The number of reported cases, the incidence rates per 1,000 population, age of persons afflicted, and the reporting sources on venereal diseases for Bolivar and Washington Counties for 1968-1970 are shown in Table IV-A-10. In general, this table indicates a lower venereal disease rate in Bolivar County than in Washington County for the years 1968 through 1970. Table IV-A-10 also shows that reported venereal disease in both Bolivar and Washington Counties appears predominantly among the non-white population. The venereal disease rate among non-whites has increased sharply in both counties during the three year period. In Bolivar County, the venereal disease rate among non-whites was 5.9 per 1,000 population in 1968. By 1970 the rate had risen to 10.4 per 1,000 population. Although the Washington County non-white venereal disease rate in 1968 was higher than the Bolivar County rate in 1970 (e.g., 12.5 per 1,000 as contrasted to the 10.4 per 1,000 in Bolivar County in 1970), the rate increased even further in Washington County by 1970 to 15.3 per 1,000.

The venereal disease incidence rate for non-whites in both counties appears to be substantially higher than for the non-white population in Mississippi which had a venereal disease rate of about 7.5 persons per 1,000 population in 1969. Although the venereal disease rate does not begin to approach the rates experienced in urban inner cities such as Watts in Los Angeles which had a venereal disease rate three times greater than either county, the rates in the two counties are significantly higher among non-whites than is the situation among non-whites in the State of Mississippi as a whole.

Table IV-A-10 also indicates that the reporting source for venereal diseases in both counties tends not to be private physicians. Few reports from private physicians usually suggest a general overall under-reporting of venereal disease. Another item of information in Table-A-10 concerns ages of persons for whom venereal disease were reported. As would be expected, most of the venereal disease incidence were reported for the adult population over 18 years of age.

### Tuberculosis

There are two separate files which must be considered for the analysis of tuberculosis on the county level. These files are (1) the Tuberculosis Counts from the Registry of Reportable Diseases (Table IV-A-11) and, (2) the Tuberculosis Chemoprophylaxis File (Tables IV-A-12 - IV-A-15).

TABLE IV-A-10  
 VENEREAL DISEASE - RACE, AGE AND REPORTING SOURCE  
 BOLIVAR AND WASHINGTON COUNTY 1968-1970

Rate per 1000 Persons

Bolivar County	1968	Rates	1969	Rates	1970	Rates
<u>Total Reported</u>						
White	207	3.8	309	5.9	328	6.6
Non-white	3	0.2	9	.5	10	.5
Unknown	204	5.9	299	8.6	318	10.4
	-	-	1	-	-	-
<u>Age</u>						
Under 18	38	1.5	43	1.8	41	1.9
18 or older	169	5.7	265	9.2	284	10.1
Unknown	-	-	1	-	3	-
<u>Source of Reporting</u>						
Private physician	2	-	11	-	2	-
Other-incl. Health Dept.	205	-	205	-	323	-
Unknown	-	-	-	-	3	-
<u>Washington County</u>						
<u>Total Reported</u>						
White	545	7.1	504	6.7	637	9.0
Non-white	25	.7	38	1.1	42	1.3
Unknown	520	12.5	465	11.2	595	15.3
	-	-	1	-	-	-
<u>Age</u>						
Under 18	53	1.5	70	2.1	83	2.9
18 or older	492	11.7	432	10.2	553	13.6
Unknown	-	-	2	-	1	-
<u>Source of Reporting</u>						
Private physician	18	-	13	-	15	-
Other-incl. Health Dept.	527	-	491	-	621	-
Unknown	-	-	-	-	1	-

Source: Mississippi State Department of Health

TABLE IV-A-11  
Report on Tuberculosis Register  
Bolivar County

New Cases Added to Register by Original Diagnosis and Activity Status or Runyon Group															
Original Diagnosis	1965						1966						1967		
	Original Activity Status			Arrested or Inactive			Activity			Original Activity Status			Original Activity Status		
	Activity With Pos. Bact.		Activity Unknown	Total	Total	Total	Activity With Pos. Bact.		Quiescent or Inactive	Activity Unknown	Total	Total	With Pos. Bact.	Quiescent or Inactive	Activity Unknown
	Total	Total					Total	Total							
	Total New Cases	25	21	17	4	0	18	17	15	1	0	24	21	12	2
New Cases with M. tuberculosis, negative bact., or no bact. test	19	15	11	4	0	14	13	11	1	0	23	20	11	2	1
Pulmonary (excluding primary)	18	15	11	3	0	14	13	11	1	0	19	16	10	2	1
Primary	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Extrapulmonary	1	0	0	1	0	0	0	0	0	0	4	4	1	0	0
3	Runyon Group														
Total	I	II	III	IV	Total	I	II	III	IV	Total	I	II	III	IV	Total
New cases with unclassified myco.	6	0	1	5	0	4	0	1	3	0	1	0	1	0	0
Pulmonary	6	0	1	5	0	4	0	1	3	0	1	0	1	0	0
Extrapulmonary	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Previously closed cases put back on register0															
Cases removed from register22															
Previously closed cases put back on register3															
Cases removed from register18															
Previously closed cases put back on register1															
Cases removed from register3															

TABLE IV-A-11  
Report on Tuberculosis Register  
Bolivar County  
(Cont.)

New Cases Added to Register by Original Diagnosis and Activity Status		1968					1969					1970				
		Original Activity Status					Original Activity Status					Original Activity Status				
		Total	With Pos. Bact.	Quiescent or Inactive	Activity Unknown	Total	Total	With Pos. Bact.	Quiescent or Inactive	Activity Unknown	Total	Total	With Pos. Bact.	Quiescent or Inactive	Activity Unknown	Total
Total New Cases		24	23	16	1	0	21	19	13	2	0	15	13	9	2	0
Pulmonary (excluding Primary)		21	21	15	0	0	20	18	13	2	0	15	13	9	2	0
Primary		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Extrapulmonary		3	2	1	1	0	1	1	0	0	0	0	0	0	0	0
Previously closed cases put back on register		19					Previously closed cases put back on register					Previously closed cases put back on register				
Cases removed from register							Cases removed from register					Cases removed from register				

TABLE IV-A-11  
Report on Tuberculosis Cases  
Bolivar County  
(Cont.)

Register Cases at Home	1965						1966						1967					
	Latest Activity Status			Latest Activity Status			Latest Activity Status			Latest Activity Status			Latest Activity Status			Latest Activity Status		
	Arrested or Inactive		Activity Unknown	Arrested or Inactive		Activity Unknown	Arrested or Inactive		Activity Unknown	Arrested or Inactive		Activity Unknown	Arrested or Inactive		Activity Unknown	Arrested or Inactive		Activity Unknown
	Total	With Pos. Bact.		Total	With Pos. Bact.		Total	With Pos. Bact.		Total	With Pos. Bact.		Total	With Pos. Bact.		Total	With Pos. Bact.	
Cases at Home	95	47	13	48	0	0	91	34	9	84	0	0	32	8	52	0	0	0
Latest diagnosis																		
Pulmonary (excluding Primary)	92	46	13	46	0	0	88	34	9	80	0	0	28	8	52	0	0	0
Primary	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Extrapulmonary	3	1	0	2	0	0	3	0	0	4	0	0	4	0	0	0	0	0
Time since Last Medical Rept.																		
Less than 6 Months	61	33	11	28	0	0	70	27	9	63	0	0	28	7	35	0	0	0
6-11 Months	18	5	2	13	0	0	12	4	0	17	0	0	4	1	13	0	0	0
12-23 Months	11	7	0	4	0	0	7	3	0	4	0	0	0	0	4	0	0	0
24 Months	5	2	0	3	0	0	2	0	0	0	0	0	0	0	0	0	0	0
Bacteriological classification																		
Last six months of	7	7	7	0	0	0	5	5	5	8	0	0	8	8	0	0	0	0
Positive, M. tuberculosis	6	6	6	0	0	0	4	4	4	0	0	0	0	0	0	0	0	0
Positive, unclassified myco.	53	22	0	31	0	0	58	18	0	48	0	0	17	0	31	0	0	0
Negative	29	12	0	17	0	0	24	7	0	28	0	0	7	0	21	0	0	0
No Report																		
Nursing Service in																		
Cases with service	82	38	12	44	0	0	84	32	9	77	0	0	30	8	47	0	0	0
Number of home visits	165	87	34	78	0	0	160	83	21	215	0	0	108	24	107	0	0	0
Number of office visits	197	112	33	85	0	0	254	121	35	220	0	0	88	19	132	0	0	0
Cases without service	13	9	1	4	0	0	7	2	0	7	0	0	2	0	5	0	0	0
Treatment (OPDI) Status																		
*On OPDI at end of	45	30	9	15	0	0	44	23	7	50	0	0	30	8	24	0	0	0
*OPDI stopped during	6	2	0	4	0	0	4	0	0	6	0	0	0	0	6	0	0	0
*OPDI stopped before	30	9	1	21	0	0	31	6	2	20	0	0	2	0	18	0	0	0
Never on OPDI	14	6	3	8	0	0	12	5	0	4	0	0	0	0	4	0	0	0
Unknown	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

\*Year at top of chart



TABLE IV-A-11  
Report on Tuberculosis Cases  
Bolivar County  
(Cont.)

Register Cases at Home	1968					1969					1970				
	Latest Activity Status		Latest Activity Status		Activity Unknown	Latest Activity Status		Latest Activity Status		Activity Unknown	Latest Activity Status		Latest Activity Status		Activity Unknown
	Total	With Pos. Bact.	Quiescent or Inactive	Active		Total	With Pos. Bact.	Quiescent or Inactive	Active		Total	With Pos. Bact.	Quiescent or Inactive	Active	
Cases at Home	81	30	5	51	0	86	22	4	64	0	81	19	3	62	0
Latest Diagnosis															
Pulmonary (excluding Primary)	78	28	5	50	0	85	21	4	64	0	80	19	3	61	0
Primary	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Extrapulmonary	3	2	0	1	0	1	1	0	0	0	1	0	0	1	0
Time since Last Medical Rept.															
Less than 6 months	57	23	5	34	0	75	19	4	56	0	65	17	3	48	0
6-11 months	16	4	0	12	0	9	2	0	7	0	13	2	0	11	0
12-23 months	5	3	0	2	0	1	1	0	0	0	3	0	0	3	0
24 months	3	0	0	3	0	1	0	0	1	0	0	0	0	0	0
Bacteriological classification															
Last 6 months of	2	2	2	0	0	3	3	3	0	0	2	2	2	0	0
Positive, M. tuberculosis	3	3	3	0	0	1	1	1	0	0	1	1	1	0	0
Positive, unclassified myco.	43	13	0	30	0	65	13	0	52	0	58	13	0	45	0
Negative	33	12	0	21	0	17	5	0	12	0	20	3	0	17	0
No Report															
Nursing Service in															
Cases with service	73	28	5	45	0	84	21	4	63	0	77	19	3	58	0
Number of home visits	149	85	14	64	0	350	127	24	223	0	187	59	16	128	0
Number of office visits	186	90	16	96	0	250	75	7	175	0	245	86	10	159	0
Cases without service	8	2	0	6	0	2	1	0	1	0	4	0	0	4	0
Treatment (OPDT) Status															
*On OPDT at end of	53	28	4	25	0	56	21	4	35	0	49	18	3	31	0
*OPDT stopped during	9	1	1	8	0	8	0	0	8	0	14	1	0	13	0
*OPDT stopped before	18	1	0	17	0	22	1	0	21	0	18	0	0	18	0
Never on OPDT	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0
Unknown	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

\*Year at top of chart

TABLE IV-A-11  
Report on Tuberculosis Register  
Bolivar County - 1965-70  
(Cont.)

Register Cases by Supervision & Race	1965			1966			1967			1968			1969			1970		
	Total	White	Non-White	Total	White	Non-White	Total	White	Non-White	Total	White	Non-White	Total	White	Non-White	Total	White	Non-White
Total Cases on Register	99	20	79	100	19	81	90	20	70	95	20	75	92	21	71	86	18	68
Rate Per 1000	1.7	1.0	2.0	1.7	1.0	2.1	1.6	1.0	1.9	1.7	1.0	2.2	1.8	1.2	2.0	1.7	1.0	2.2
In TB Sanatorium	2	0	2	8	1	7	5	1	4	12	2	10	5	2	3	4	0	4
In Mental Hospital	1	0	1	1	0	1	0	0	0	1	0	1	0	0	0	0	0	0
In Penal Institution	1	0	1	0	0	0	1	0	1	1	0	1	1	0	1	1	0	1
At Home (Not in Institution)	95	20	75	91	18	73	84	19	65	81	18	63	86	19	67	81	18	63
Private Physician Only	0	0	0	2	2	0	1	1	0	1	1	0	0	0	0	0	0	0
Health Dept. Only	70	7	63	76	10	66	68	13	55	56	8	48	78	16	62	70	15	55
Health Dept. & Others	24	12	12	11	5	6	12	3	9	22	8	14	7	2	5	11	3	8
Hospital Out-Patient only	1	1	0	2	1	1	3	2	1	2	1	1	1	1	0	0	0	0

Source: Mississippi State Department of Health

TABLE IV-A-11  
Report on Tuberculosis Register  
Washington County  
(Cont.)

New Cases Added to Register by Original Diagnosis and Activity Status or Runyon Group																			
Original Diagnosis	1965				1966				1967										
	Original Activity Status				Original Activity Status				Original Activity Status										
	Arrested or Inactive		Activity Unknown	Total	Arrested or Inactive		Activity Unknown	Total	Arrested or Inactive		Activity Unknown								
	With Pos. Bact.	Total			With Pos. Bact.	Total			With Pos. Bact.	Total									
Total New Cases	53	43	29	10	0	35	30	22	5	26	23	12	2	1					
New cases with M. tuberculosis, negative bact., or No. bact. test	33	23	9	10	0	24	19	11	5	0	26	12	2	1					
Pulmonary (excluding Primary)	29	20	9	9	0	21	16	11	5	0	19	12	2	1					
Primary	1	0	0	1	0	1	1	0	0	0	1	0	0	0					
Extrapulmonary	3	3	0	0	0	2	2	0	0	0	6	0	0	0					
	Runyon Group				Runyon Group				Runyon Group				Runyon Group						
	Total	I	II	III	IV	Total	I	II	III	IV	Total	I	II	III	IV				
New cases with unclassified myco.	20	0	4	16	0	11	0	7	4	0	0	0	0	0	0				
Pulmonary	20	0	4	16	0	11	0	7	4	0	0	0	0	0	0				
Extrapulmonary	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
Previously closed cases put back on register 1												Previously closed cases put back on register 2				Previously closed cases put back on register 10			
Cases removed from register 56												Cases removed from register 47				Cases removed from register 60			

Previously closed cases put back on register 1 56  
Cases removed from register

Previously closed cases put back on register 2 47  
Cases removed from register

Previously closed cases put back on register 10 64  
Cases removed from register

TABLE IV-A-11  
Report on Tuberculosis Register  
Washington County  
(Cont.)

New Cases Added to Register by Original Diagnosis and Activity Status															
Original Diagnosis	1968														
	Original Activity Status					Original Activity Status					Original Activity Status				
	Activity With Pos. Bact.		Quiescent or Inactive		Activity Unknown	Activity With Pos. Bact.		Quiescent or Inactive		Activity Unknown	Activity With Pos. Bact.		Quiescent or Inactive		Activity Unknown
	Total		Total			Total		Total			Total		Total		
Total New Cases	22	19	12	3	0	18	16	8	1	1	18	11	6	6	1
Pulmonary (excluding Primary)	19	16	12	3	0	12	10	6	1	1	9	5	3	4	0
Primary	1	1	0	0	0	2	2	0	0	0	0	0	0	0	0
Extrapulmonary	2	2	0	0	0	4	4	2	0	0	9	6	3	2	1
88	Previously closed cases put back on register 3 Cases removed from register 66					Previously closed cases put back on register 5 Cases removed from register 31					Previously closed cases put back on register 2 Cases removed from register 23				

TABLE IV-A-11  
Report on Tuberculosis Register  
Washington County  
(Cont.)

Register Cases at Home	1965						1966						1967					
	Latest Activity Status			Arrested or Inactive			Latest Activity Status			Quiescent or Inactive			Latest Activity Status			Quiescent or Inactive		
	Active			Activity Unknown			Active			Activity Unknown			Active			Activity Unknown		
	Total	With Pos. Bact.	Total	Total	With Pos. Bact.	Total	Total	With Pos. Bact.	Total	Total	With Pos. Bact.	Total	Total	With Pos. Bact.	Total	Total	With Pos. Bact.	Total
Cases at Home	170	59	28	111	0	166	40	22	126	0	132	40	15	92	0	0	0	0
Latest Diagnosis																		
Pulmonary (excluding Primary)	162	55	28	107	0	158	37	22	121	0	122	32	15	90	0	0	0	0
Primary	0	0	0	0	0	2	1	0	1	0	1	1	0	0	0	0	0	0
Extrapulmonary	8	4	0	4	0	6	2	0	4	0	9	7	0	2	0	0	0	0
Time Since Last Medical Rept.																		
Less than 6 months	164	56	27	108	0	164	40	22	124	0	129	40	15	89	0	0	0	0
6-11 months	5	2	1	3	0	2	0	0	2	0	3	0	0	3	0	0	0	0
12-23 months	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24 months	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bacteriological classification																		
Last 6 months of																		
Positive, M. tuberculosis	7	7	7	0	0	8	8	8	0	0	6	6	6	0	0	0	0	0
Positive, unclassified myco.	21	21	21	0	0	14	14	14	0	0	9	9	9	0	0	0	0	0
Negative	140	31	0	109	0	143	17	0	126	0	116	25	0	91	0	0	0	0
No Report	2	0	0	2	0	1	1	0	0	0	1	0	0	1	0	0	0	0
*Nursing Service in																		
Cases with service	168	59	28	109	0	166	40	22	126	0	132	40	15	92	0	0	0	0
Number of home visits	617	214	94	403	0	580	165	92	415	0	546	193	69	353	0	0	0	0
Number of office visits	1494	729	216	765	0	1443	486	136	957	0	1135	482	198	653	0	0	0	0
Cases without service	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Treatment (OPDT) Status																		
*On OPDT at end of	71	36	12	35	0	57	27	11	30	0	60	34	10	26	0	0	0	0
*OPDT stopped during	31	3	3	28	0	27	2	2	25	0	14	0	0	14	0	0	0	0
*OPDT stopped before	42	9	6	33	0	49	4	3	45	0	38	1	1	37	0	0	0	0
Never on OPDT	26	11	7	15	0	33	7	6	26	0	20	5	4	15	0	0	0	0
Unknown	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

\*Year at top of chart



TABLE IV-A-11  
Report on Tuberculosis Register  
Washington County  
(Cont.)

Register Cases at Home	1968				1969				1970			
	Latest Activity Status		Latest Activity Status		Latest Activity Status		Latest Activity Status		Latest Activity Status		Latest Activity Status	
	Total	Active	Quiescent or Inactive	Activity Unknown	Total	Active With Pos. Bact.	Quiescent or Inactive	Activity Unknown	Total	Active With Pos. Bact.	Quiescent or Inactive	Activity Unknown
Cases at Home	92	21	2	0	91	23	5	0	88	19	3	0
Latest Diagnosis												
Pulmonary (excluding Primary)	80	14	2	0	77	17	4	0	71	12	3	0
Primary	2	1	0	0	3	1	0	0	2	0	0	0
Extrapulmonary	10	6	0	0	11	5	1	0	15	7	0	0
Time Since Last Medical Rept.												
Less than 6 months	90	20	2	0	84	21	5	0	84	19	3	0
6-11 months	2	1	0	0	3	0	0	0	4	0	0	0
12-23 months	0	0	0	0	4	2	0	0	0	0	0	0
24 months	0	0	0	0	0	0	0	0	0	0	0	0
*Bacteriological classification												
Last six months of												
Positive, M. tuberculosis	2	2	2	0	5	5	5	0	3	3	0	0
Positive, unclassified myco.	0	0	0	0	0	0	0	0	0	0	0	0
Negative	87	18	0	0	82	16	0	0	83	16	0	0
No Report	3	1	0	0	4	2	0	0	2	0	2	0
*Nursing Service in												
Cases with service	91	21	2	0	86	21	5	0	87	19	3	0
Number of home visits	356	95	12	0	389	108	22	0	389	113	29	0
Number of office visits	804	314	9	0	1028	417	25	0	967	421	13	0
Cases without service	1	0	0	0	5	2	0	0	1	0	0	0
Treatment (OPDT) Status												
*On OPDI at end of	51	20	2	0	57	21	5	0	56	19	3	0
*OPDI stopped during	18	1	0	0	15	1	0	0	12	0	0	0
*OPDI stopped before	16	0	0	0	18	1	0	0	20	0	0	0
Never on OPDI	7	0	0	0	1	0	0	0	0	0	0	0
Unknown	0	0	0	0	0	0	0	0	0	0	0	0

\*Year at top of chart

TABLE IV-A-11  
Report on Tuberculosis Register  
Washington County - 1965-70  
(Cont.)

Register Cases by Supervision	1965			1966			1967			1968			1969			1970		
	Total	White	Non-White	Total	White	Non-White	Total	White	Non-White	Total	White	Non-White	Total	White	Non-White	Total	White	Non-White
Total Cases on Register	182	43	139	174	39	135	149	38	111	104	30	74	95	31	64	93	28	65
Rate Per 1000	2.3	1.3	3.0	2.2	1.2	2.9	1.9	1.1	2.6	1.4	0.9	1.8	1.3	0.9	1.5	1.3	0.9	1.7
In TB Sanatorium	9	4	5	6	2	4	12	5	7	8	4	4	1	1	0	2	0	2
In Mental Hospital	3	0	3	2	0	2	4	0	4	3	0	3	2	0	2	2	0	2
In Penal Institution	0	0	0	0	0	0	1	0	1	1	0	1	1	0	1	1	0	1
At Home (Not in Institution)	170	39	131	166	37	129	132	33	99	92	26	66	91	30	61	88	28	60
Private Physician Only	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Health Dept. Only	138	25	113	133	21	112	104	23	81	64	18	46	62	16	46	15	23	52
Health Dept. & Others	31	13	18	33	16	17	28	10	18	28	8	20	29	14	15	13	5	8
Hospital Out-Patient Only	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

The Registry of Reportable Diseases requires considerable caution in analysis. However, the Tuberculosis portion of that file is perhaps the most reliable portion of that file, with an annual update of the Tuberculosis Registry for service purposes, regarding total cases and detailed information on cases being followed on an outpatient basis. The other file, Tuberculosis Chemoprophylaxis has been maintained since 1970, and has useful information on reason for initiation of the chemoprophylaxis such as household contact, positive tuberculin in children age 20 or less, tuberculin convertors, ex-patients, x-ray changes, etc. These data are maintained on an age, sex, race basis with dates of initiation and termination noted.

1. Tuberculosis as reported from Registry of Reportable Diseases and detail from tuberculosis register

In general, tuberculosis case rates are highest in the non-white male and lowest in the white female populations. While both case rate and death rates are almost twice as high in large metropolitan areas, concentrations of tuberculosis are still found in rural areas particularly where there has been a lag in general socio-economic development. The Tuberculosis Register, while providing information on cases by race, is not coded for age and sex, making extensive epidemiological analysis impossible. The Tuberculosis Register for both counties reveals a preponderance of non-white cases for the years 1965-1970. More specifically in terms of total cases on the register, Washington County, while reflecting a greater overall number of cases, as would be expected due to its larger population, evidences a general decrease in the total cases among the white population from 1965 to 1970 with an even larger relative decrease in cases in the non-white population. In Bolivar County there has been little or no relative decrease in the cases registered which average around 20 per year for the seven year period. There has been, however, a general decline in registered cases among the non-white population. While Washington County has evidenced a slight decrease in total cases at home, the registered cases for Bolivar County has remained fairly stable for whites as have the rates for non-institutionalized non-whites.

The Tuberculosis Register affords a great deal of information on cases cared for at home in terms of most recent diagnosis, recency of medical service, bacteriological classification, nursing service, and outpatient treatment status. Several findings are of interest from this portion of the file. With regard to latest activity status (that is active, arrested, or unknown activity) Bolivar County evidences a fairly constant rate of patients whose bacteriological status is termed quiescent, or inactive, accompanied by a slight relative decrease in those patients with positive bacteriological status. Similarly, there has been a decrease in positive bacteriological status for patients on homecare in Washington County, but a fairly constant rate of inactive homecare cases. (See Table IV-A-11). In terms of latest diagnosis of homecare patients, Bolivar County shows rather constant rates of pulmonary (excluding primary) cases while the extra-pulmonary category is relatively infrequently diagnosed. In Washington County, however, there is a greater frequency of extra-pulmonary diagnosis made.

Regarding nursing services to the cases on outpatient status, two categories, number of home visits and number of office visits are of interest. In Bolivar County, the number of home visits fluctuates to a greater degree than does the home visit category for Washington County, with the number of home visits in that county remaining relative constant to the number of cases on the register. More striking is the category, number of office visits, with Bolivar County showing a much lower relative number of office visits for register cases than is evidenced by the Washington County nursing services. (See Table IV-A-11).

## 2. TB Chemoprophylaxis

The TB Chemoprophylaxis file, available for the years 1970 and following, provides an interesting record of TB service utilization. Since the advent of certain drugs, chemoprophylaxis has been established as an appropriate tuberculosis control measure. Chemoprophylaxis may be defined as (1) primary prophylaxis (drug therapy when tuberculosis infection has occurred) and (2) secondary prophylaxis (drug therapy after infection has occurred). Several trials by the Public Health Service have shown that primary prophylaxis is successful in preventing primary tuberculosis among uninfected children, as well as being a practical and effective approach to public tuberculosis control programs in the supervision of contacts. Regarding secondary chemoprophylaxis, several large-scale public health studies have shown that prophylaxis prevented 80% of the complications of childhood tuberculosis. Chemoprophylaxis is also often recommended for children tuberculin converters and/or children who have contact with adult converters. Several major variables from the TB chemoprophylaxis record are of interest: (1) those socio-demographic variables including age, race, and sex; (2) reason for initiation of the chemoprophylaxis, including household contacts, positive tuberculin tests for those below age 20, tuberculin converters, ex-patients, x-ray changes, etc., (3) reasons for prophylaxis termination including completion of prescribed period of prophylaxis, drug reaction, refusals to cooperate, etc., and (4) diagnostic information upon completion of chemoprophylaxis. Bolivar County evidences a greater relative number of prophylaxis initiations, especially in the category of "positive tuberculin tests for persons below age 20" by race and sex for both years. Additionally, the category "ex-patient (diagnosed case) with inadequate or no previous chemotherapy" reveals, especially in non-white categories for both sexes, an unusually great contribution to the overall reason for initiation of chemoprophylaxis (See Table IV-A-12). The data generally appears to afford greater insight into health department programmatic emphasis than into the true statistical relationship between chemoprophylaxis initiation and need within the population at risk.

### Tuberculosis Chemoprophylaxis Terminations

With regard to the reasons for termination from this program, several findings are of interest. Generally, the trend has been to shorter duration of chemoprophylaxis, as expressed by the mean number of months of treatment.

TABLE IV-A-12  
TB CHEMOPROPHYLAXIS INITIATED  
Reasons by Race and Sex, Average Age  
Bolivar and Washington Counties, 1970

Reasons	Bolivar	Washington
Household Contact or TB Converter	54	27
White	3	5
Black	51	22
Male	20	13
Female	34	14
Ex-Patient, No Chemoprophylaxis	197	114
White	18	19
Black	179	95
Male	42	41
Female	155	73
Pos TB Age < 20 or Pregnancy Pos TB	106	23
White	7	4
Black	99	19
Male	62	20
Female	44	3
Average Age of Patients (Years)		
White	39.1	48.4
Black Male	25.1	35.4
Black Female	35.5	40.7

Source: Mississippi State Department of Health



TABLE IV-A-13  
TB Chemoprophylaxis Initiated  
Reason by Race and Sex, Average Age  
Bolivar and Washington Counties, 1971

Reasons	Bolivar	Washington
Household Contact or TB Converter	79	34
White	13	11
Black	66	23
Male	40	19
Female	39	15
Ex-Patient, No Previous Chemoprophylaxis	153	184
White	66	30
Black	187	154
Male	159	64
Female	94	120
Pos TB Age Less than 20 or Pregnancy Pos TB	12	32
White	0	8
Black	12	24
Male	7	13
Female	5	19
Average Age of Patients (years)		
White	41.0	39.6
Black Male	36.3	43.4
Black Female	36.7	38.6

Source: Mississippi State Department of Health

While the complete reason for this is not fully apparent, age at termination, with one exception, is evidencing some increase. In Bolivar County, the mean number of months of chemoprophylaxis has dropped for the period from 8.00 to 5.12 months for whites, and from 5.68 to 4.95 months for non-whites. In Washington County the decreases have been even more apparent with whites dropping from 9.82 to 4.03 months and non-whites from 9.25 months to 7.93 mean months of prophylaxis. (See Table IV-A-14).

TABLE IV-A-14

TB Chemoprophylaxis Terminations -  
Mean Months of Chemoprophylaxis

	1970 Bolivar	1970 Washington	1971 Bolivar	1971 Washington
White	8.00	9.82	5.12	4.03
Non-white	5.68	9.25	4.95	7.93

Source: Mississippi State Board of Health

Median age of persons terminating chemoprophylaxis reveals increases in Bolivar County for both races (non-whites from 58.8 to 65.2 years, and whites from 69.7 to 74.5 years). Washington County shows an increase in median age at termination for non-whites (71.5 to 74.5) but a decrease in the median age for whites (from 80.0 to 73.4 years).

TABLE IV-A-15

TB Chemoprophylaxis Terminations  
Median Age at Termination

	1970 Bolivar	1970 Washington	1971 Bolivar	1971 Washington
White	69.75	80.00	74.50	73.38
Non-white	58.83	71.50	62.25	74.50

Source: TB Chemoprophylaxis Register, 1970-1971, Mississippi State Department of Health.

The time period for which these data are available is too short to permit reliable interpretation; however, these trends bear watching, especially the data regarding the mean age at termination. Hopefully, this will assist in assessing the relative experience of the population vis a vis this disease.

Further examination of the data on TB chemoprophylaxis reveals the following information concerning the initial reasons for prophylaxis tabulated with terminations for two years (1970 and 1971). The two "reasons for initiation" categories accounting for the largest percentage of terminations are: (1) positive tuberculin tests in persons below 20 years of age, and (2) ex-patient (diagnosed case) with inadequate or no previous chemotherapy. Non-white female terminations are predominantly from the "ex-patient" category for both counties. For non-white males, neither category predominates. While the relative total number of TB chemoprophylaxis terminations is much smaller in the white group for both sexes, the predominant group of termination is from the "ex-patient" category.

In sum, the data for the two years, while too scanty to allow hard and fast conclusions, seem to point to a definite trend toward increased prophylaxis of youthful TB contacts and/or tuberculin test converters while at the same time revealing what appears to be an attempt to terminate prophylaxis of the older ex-patient.

#### Diabetes Screening

As part of the chronic illness services of the County Health Departments, a diabetes screening program has been in operation since 1965. While data were collected by county by the diabetic screening program only for the years 1966 and 1967, we have been advised to exercise great caution when analyzing these data, contained in Table IV-A-16. While the data available to us include race, sex, date of screening, initial or rescreening classification, screening results, retest results if rescreening and disposition of positive cases, we have limited our analysis to considerations of percent positives by age and sex, controlling for county of origin.

A brief note concerning the epidemiological significance of diabetes is in order. Diabetes is a well-known clinical syndrome characterized by slower than normal rate of disappearance of glucose from the blood stream, but well over 95% of all cases of diabetes mellitus are of unknown causation, often termed "primary" or "essential" diabetes. While the prevalence of diabetes has been determined in the literature in a variety of ways, including household interview, urine and blood screening, most of the existing studies are not comparable because of the different methods and/or diagnostic criteria applied. What is known is that the prevalence of diabetes increases with age and that over age 40 the rates are about 50% higher in females than in males. At younger ages, the differences are less marked, with the ratio of female to male rates about 2 to 1 between ages 25 and 40. In the ages contributing most heavily to new cases (ages 55 to 75), rates for males range between 100 and 125 per 100,000, while females range between 160 and 200 per 100,000. Clinical histories suggest the following variables may be important precursors of the disease: previous child bearing histories, obesity, and genetic determination. No effective measures for

TABLE IV-A-16  
Positive Cases Found By  
Diabetes Screening Program  
Bolivar and Washington Counties, 1966-67

	Under 19		20-24		25-44		45-54		55-64		65 & Over	
	White	Non-White	White	Non-White	White	Non-White	White	Non-White	White	Non-White	White	Non-White
<u>1966</u>												
Bolivar	6	20	1	1	41	147	31	92	28	53	29	50
Washington	16	36	10	28	51	147	29	80	19	46	61	20
<u>1967</u>												
Bolivar	3	117	4	73	9	167	8	49	4	26	27	18
Washington	9	119	6	76	91	332	54	143	25	79	15	51

Source: Mississippi State Department of Health

the prevention of diabetes are known as the most important variables associated with the disease such as age, sex, race and fertility are not subject to public health program control. The only truly controllable factor known to be highly associated with diabetes is obesity, but it is by no means certain that weight reduction decreases the risk of developing diabetes. Thus, in the face of inadequate preventive measures, public health emphasis is placed on attempts to influence favorably the course of the disease through early detection and careful supervision, generally defined in terms of prescribed dietary and therapeutic regimens.

The age group data for Mississippi for the years 1966 and 1967 reveal a striking similarity to national findings. The percent positive by age are as follows: less than 25 between 1% and 4%, 25 to 44 between 6% and 10%, 45 and 64 between 9% and 14%, and 65 and over 15% to 17%. When controlled for total population of each county, Bolivar and Washington reveal strikingly similar rates. A real similarity seems detectable between the activities of Washington County and Bolivar County Health Departments regarding suspected diabetes referral cases or suspected diabetes admitted for services, as well as medical and/or nursing visits in this disease category. While both county offices reflect fluctuations in the number of nursing visits, the general level of referrals and admission to service for this disease category remains fairly constant across the period 1965 to 1970.

Of the two counties, Washington County consistently found a higher percent of positive screening tests than did Bolivar County, with both Counties revealing a preponderance of non-white positives (Table IV-A-16). This finding reflects, of course, several statistically mitigating circumstances. Utilization of health department services for diabetes screening appears to be a totally race-related category; non-white outnumber whites in terms of screenings performed by almost two to one, as would be expected on the basis of population. Additionally, these data are reflective of utilization of a particular service, in this case diabetes screening, and not of the total population at risk to the disease. If the total population were completely screened, they would likely evidence an additional number of positive tests. Thus, while the data appear not unlike findings that are generally reported in epidemiological literature, great caution must be exercised in interpreting these results.

### Deaths

Tables IV-A-17 to IV-A-19 show death rates per 1,000 population from 1965 to 1970 by race, and race classified by age and causes of death. Generally, death rates for both whites and non-whites tend to be slightly higher in Washington County than in Bolivar County. The only exception is in 1970 when Bolivar County had a higher death rate than Washington County. Table IV-A-18 indicates that for each year and in both counties, the death rate for non-whites was consistently higher than for whites. Depending on the year (and county) being examined, at least two more non-white deaths per 1,000 occurred and as many as 6.1 more non-white deaths per 1,000 than white deaths per 1,000. Non-white deaths in both counties tended to be higher (with a couple of exceptions) in all age groups - especially in the younger age groups. In terms of causes of death, since 1965, deaths due (or attributed)



TABLE IV-A-17  
DEATH RATES FOR  
BOLIVAR AND WASHINGTON COUNTIES  
1965-1970

	BOLIVAR			WASHINGTON		
	RATES	WHITE	NONWHITE	TOTAL	WHITE	NONWHITE
1965	8.2	10.6	9.8	8.0	13.4	11.1
1966	8.0	10.4	9.6	9.4	12.6	11.3
1967	8.0	10.7	9.7	7.8	12.2	10.2
1968	7.6	11.9	10.3	8.4	14.5	11.7
1969	8.5	11.5	10.5	8.4	12.6	10.7
1970	9.0	11.8	10.7	7.9	12.9	10.6

TABLE IV-A-18  
DEATH RATES BY AGE  
BOLIVAR AND WASHINGTON COUNTIES  
1965-1970

BOLIVAR						
AGE	1965	1966	1967	1968	1969	1970
65 plus						
white	76.5	70.4	63.6	57.9	58.9	64.5
nonwhite	74.1	71.2	66.9	66.7	67.1	64.4
45-64						
white	10.0	8.2	6.8	8.1	11.0	11.3
nonwhite	12.2	15.2	5.2	16.1	15.1	16.4
44 or younger						
white	1.6	1.2	1.9	1.7	1.9	1.0
nonwhite	3.9	3.6	3.1	3.4	3.3	3.4
WASHINGTON						
AGE	1965	1966	1967	1968	1969	1970
65 plus						
white	60.0	62.3	51.7	54.0	51.4	61.1
nonwhite	78.0	81.8	70.2	87.3	76.9	69.4
45-64						
white	11.3	11.2	10.3	11.6	9.8	9.3
nonwhite	17.9	18.0	17.2	18.8	16.6	20.5
44 or younger						
white	1.6	2.7	2.5	2.3	2.5	2.0
nonwhite	4.8	3.7	4.2	4.1	3.5	3.5

SOURCE: MISSISSIPPI STATE DEPARTMENT OF PUBLIC HEALTH

TABLE IV-A-19  
DEATH RATES BY CAUSES  
BOLIVAR AND WASHINGTON COUNTIES  
1965-1970

BOLIVAR						
CAUSES	1965	1966	1967	1968	1969	1970
HEART DISEASE						
white	3.3	3.3	2.8	3.6	4.9	5.1
nonwhite	3.3	3.3	3.2	5.7	5.8	5.2
CANCER						
white	1.4	1.5	1.2	1.4	1.1	1.8
nonwhite	0.7	1.1	1.0	1.0	1.3	1.7
HOMICIDE						
white	0.2	0.2	0.1	0.2	1.2	0.1
nonwhite	0.1	0.2	0.1	0.2	0.1	0.2
ACCIDENTS						
white	0.9	0.6	0.9	0.6	0.3	0.2
nonwhite	0.8	0.6	0.5	0.4	0.3	0.4
ILL DEFINED						
white	0.1	0.2	0.2	0.1	0.2	0.2
nonwhite	0.9	0.7	1.2	1.6	1.0	1.5
WASHINGTON						
CAUSES	1965	1966	1967	1968	1969	1970
HEART DISEASE						
white	3.1	3.3	2.7	3.7	3.9	3.9
nonwhite	2.8	3.6	3.3	5.7	5.3	5.1
CANCER						
white	1.5	1.7	0.1	1.5	1.4	1.3
nonwhite	1.4	1.2	1.2	1.8	1.6	1.8
HOMICIDE						
white	0.1	0.3	0.2	0.3	0.2	0.3
nonwhite	0.3	0.2	0.2	0.3	0.3	0.3
ACCIDENTS						
white	0.7	0.8	1.0	0.3	0.4	0.6
nonwhite	0.9	0.8	0.9	0.3	0.4	0.4
ILL DEFINED						
white	0.1	0.6	0.4	0.5	0.3	0.2
nonwhite	2.4	3.1	3.4	2.2	1.6	2.0

SOURCE: MISSISSIPPI STATE DEPARTMENT OF PUBLIC HEALTH

to heart disease have increased significantly for both whites and non-whites. In the causes of death categories examined, non-white death rates exceeded white death rates consistently and significantly only in the "illdefined causes of death". In the other causes of death categories, no systematic trends were discerned between whites and non-whites over the six-year period covered by the data.

The data suggest that the non-white death rate is (and has been) relatively high especially in the younger age group. An improvement in the health status for non-whites in both counties would be indicated by a reduction in the death rates.

### Other Aspects of Population Status

In the conceptual framework developed earlier in this report, we indicated several other factors that should be grouped under present, past, and potential status of the population. Among the factors that will be covered in the health section are social pathology and health manpower. We mentioned earlier that social pathology data related to mental health and crime were unobtainable for two reasons. With regard to mental health, the omission of these data reflects the true situation, the relative absence of mental health activities in these counties during the 1965-1970 reference period. (Some mental health activities and data are available after 1970). With regard to crime data, three possible sources of data that we examined failed to come up with relevant statistics. The first source is the FBI reports - these data were not available by county within Mississippi. The second potential source is the law enforcement agencies within the counties - or in this situation, the sheriff's office. The problem here also was the unavailability of any historical crime data. As we indicated earlier, the sheriffs were, until very recently, limited to one term in office and also doubled as the county tax collecting official. The dual function of the sheriff compounded with the lack of tenure prohibited a continuity of records keeping. The third source is the Mississippi State Police. Repeated inquiries by Census Use Study staff failed to uncover any statistics.

The only direct source of social pathology data we have obtained is a relatively limited file on divorces. The basic data obtained from this file presented in Table IV-A-20 concern the median years of marriage before divorce for whites and non-whites in Bolivar and Washington Counties 1965-1970. These data indicate a very large gap (although narrowing with time) between white and non-white divorces. In general, the median years of marriage before divorce for whites for both counties and all years is between 3 and 7 years. For non-whites, the median number of years has tended to decrease over time. In Bolivar County in 1965, the median years of marriage before divorce was 20 years. The median years remained stable through 1967 but decreased in 1968, 1969 and 1970. By 1970, the median years of marriage before divorce for non-whites in Bolivar County was 7 - only two years more than whites in that county. The median number of years of marriage before divorce for non-whites also decreased over time in Washington County from 21 in 1965 to 12 years in 1970. However, in 1970 a large gap remained between whites and non-whites in Washington County (e.g., the median years of marriage before divorce of whites was some 8 years less than non-whites).

TABLE IV-A-20  
Number of Divorces; Median Years of Marriage Before Divorce  
Bollivar and Washington Counties  
1965-1970

	1965			1966			1967			1968			1969			1970		
	Number of divorce	Median years of marriage before divorce	Number of divorce	Median years of marriage before divorce	Number of divorce	Median years of marriage before divorce	Number of divorce	Median years of marriage before divorce	Number of divorce	Median years of marriage before divorce	Number of divorce	Median years of marriage before divorce	Number of divorce	Median years of marriage before divorce	Number of divorce	Median years of marriage before divorce	Number of divorce	Median years of marriage before divorce
Bollivar County	95		98		113		111		132		130		132		130		130	
White	47	5	48	5	66	5	57	5	74	6	77	6	74	6	77	5	77	5
Non-white	48	20	50	20	49	21	54	16	58	11	53	11	58	11	53	7	53	7
Washington County	241		255		274		286		261		249		261		249		249	
White	175	7	173	5	178	3	178	7	158	5	160	5	158	5	160	4	160	4
Non-white	66	21	82	19	96	15	108	11	103	10	89	10	103	10	89	12	89	12

In interpreting these trends, we must keep in mind that divorce is a legal process that requires court action and some legal assistance to actuate. As indicated in Chapter II, the number of disorganized families (e.g., fatherless or motherless) is disproportionately higher among non-whites than whites (at least in 1970). Therefore, the divorce statistics indicate that in Bolivar County, non-whites are obtaining access to legal services to initiate divorce proceedings that were relatively unavailable in earlier years. As can be seen from Table IV-A-20, although whites in both counties constitute a minority of the population, they tend to represent a majority of couples obtaining divorces.

#### Health Manpower (Person Power) Data

One aspect of assessment of population status is the availability of health manpower (person power) resources to population for obtaining vital medical and dentist services. In Tables IV-A-21, IV-A-22 and IV-A-23, data are shown for physicians and dentists from 1965-1970 and on nurses for 1971.

Data concerning the number and demographic characteristics of physicians located in Bolivar and Washington Counties are contained in Table IV-A-21. Washington County, for each of the semi-annual periods depicted in the table between 1965 and 1970, fared somewhat better than Bolivar County in terms of physicians per 10,000 population. On January 1, 1965, some 58 physicians were practicing in Washington County, or 7.3 physicians per 10,000. By July 1970, an increase of one physician (59 total) occurred, but since Washington County's population had been on the decline over the six-year period, the rate of physicians per 10,000 increased to 8.4 physicians.

Although starting at a lower level than Washington County in 1965, the increase in the rate of physicians per 10,000 population was much sharper in Bolivar County over the six-year period. The year 1965 noted 25 physicians in Bolivar County, or 4.3 per 10,000. By 1970, the number of physicians practicing in Bolivar County had increased to 32, and the rate per 10,000 had risen to 6.5.

The situation in terms of dentist practicing in Bolivar and Washington Counties is depicted in Table IV-A-22. On a county level, Washington County again fares better than Bolivar County with approximately 2 more dentists per 10,000 population in each of the years between 1965 and 1970. Table IV-A-22 also indicates that within Bolivar County, 6 of the 8 (9 in 1968-1970) are located in Cleveland, the largest city. The rural areas of Bolivar County over the six-year period, although containing approximately 70 percent of the population, had access only to 2 of the 8 dentists practicing in 1965-1967, and 3 of 9 in 1968-1970, in Bolivar County.

A similar situation prevailed in Washington County, with most of the dentists having their practices in Greenville and Hollandale - two of the largest places (although Washington County is less rural than Bolivar). Additionally, Table IV-A-22 indicates that although Bolivar County's



Mississippi Physicians by Race and Sex and Age Group - Semi-Annual 1965-1970

County	Total	Rate per 10,000	White		Nonwhite		Under 40	40-49	50-59	60 and over
			Male	Female	Male	Female				
January 1, 1965 Bolivar Washington	25 58	4.3 7.3	21 51	0 1	4 6	0 0	5 16	7 21	6 12	7 9
July 1, 1965 Bolivar Washington	25 58	4.3 7.3	20 21	0 1	5 6	0 0	5 16	5 20	7 12	8 10
January 1, 1966 Bolivar Washington	23 58	3.9 7.3	19 52	0 1	4 5	0 0	5 17	5 20	7 12	6 9
July 1, 1966 Bolivar Washington	24 55	4.1 6.9	20 50	0 1	4 4	0 0	6 15	6 21	6 12	6 7
January 1, 1967 Bolivar Washington	24 56	4.2 7.2	20 51	0 1	4 4	0 0	7 16	6 21	6 12	5 7
July 1, 1967 Bolivar Washington	25 57	4.3 7.3	21 52	0 1	4 4	0 0	8 17	4 22	8 11	5 7
January 1, 1968 Bolivar Washington	29 58	5.3 7.6	24 53	0 1	5 4	0 0	12 17	4 24	8 11	5 6
July 1, 1968 Bolivar Washington	29 57	5.3 7.6	24 52	0 1	5 4	0 0	11 17	5 23	8 10	5 7
January 1, 1969 Bolivar Washington	33 56	6.3 7.5	24 50	2 2	6 4	1 0	13 14	6 20	9 15	5 7

TABLE IV-A-21  
Mississippi Physicians by Race and Sex and Age Group - Semi-Annual 1965-1970 (Cont.)

County	Total	Rate per 10,000	White		Nonwhite		Under 40	40-49	50-59	60 and over
			Male	Female	Male	Female				
July 1, 1969 Bolivar Washington	33	6.3	24	2	6	1	13	6	9	5
	56	7.5	50	2	4	0	14	20	15	7
January 1970 Bolivar Washington	32	6.5	24	2	6	0	13	6	8	5
	58	8.4	52	2	4	0	16	20	15	7
July 1970 Bolivar Washington	32	6.5	23	2	7	0	12	6	8	6
	59	8.4	53	2	4	0	13	21	17	8

TABLE IV-A-22  
MISSISSIPPI DENTISTS  
COUNTY AND CITY DISTRIBUTION BY AGE GROUP AND BY RACE  
1965-1970

Bolivar County	Total	Rate per 10,000	Age Groups				Race	
			Under 40	40-49	50-59	60 and over	White	Nonwhite
Bolivar County 1965	8	1.4	4	2	2	0	8	0
1966	8	1.4	3	3	2	0	8	0
1967	8	1.4	3	3	2	0	8	0
1968	9	1.6	4	3	2	0	9	0
1969	9	1.7	3	4	1	1	9	0
1970	9	1.8	2	4	2	1	9	0
Cleveland	6	0.5	3	2	1	0	6	0
1966	6	5.0	3	2	1	0	6	0
1967	6	4.8	3	2	1	0	6	0
1968	6	4.7	3	2	1	0	6	0
1969	6	4.6	3	2	0	1	6	0
1970	6	4.5	2	2	1	1	6	0
Rural	2	0.4	1	0	1	0	2	0
1966	2	0.4	0	1	1	0	2	0
1967	2	0.4	0	1	1	0	2	0
1968	3	0.7	1	1	1	0	3	0
1969	3	0.8	0	2	1	0	3	0
1970	3	0.8	0	2	1	0	3	0

TABLE IV-A-22

## MISSISSIPPI DENTISTS

COUNTY AND CITY DISTRIBUTION BY AGE GROUP AND BY RACE  
1965-1970 (Cont.)

Washington County	Total	Rate per 10,000	Age Groups				Race	
			Under 40	40-49	50-59	60 and over	White	Nonwhite
Washington County 1965	23	2.9	9	11	2	1	21	2
1966	23	2.9	9	11	2	1	21	2
1967	22	2.8	8	10	1	3	20	2
1968	21	2.7	6	11	2	2	19	2
1969	24	3.2	7	13	2	2	22	2
1970	23	3.3	5	11	5	2	21	2
Greenville 1965	17	4.0	6	9	2	0	15	2
1966	17	4.0	6	9	2	0	15	2
1967	16	3.8	6	7	1	2	14	2
1968	16	4.0	4	8	2	2	14	2
1969	19	4.5	5	10	2	2	17	2
1970	19	4.5	4	9	4	2	17	2
Hollandale 1965	2	6.7	1	1	0	0	2	0
1966	2	6.6	1	1	0	0	2	0
1967	2	6.5	1	1	0	0	2	0
1968	2	6.4	1	1	0	0	2	0
1969	2	6.2	1	1	0	0	2	0
1970	2	6.1	1	1	0	0	2	0

TABLE IV-A-22  
MISSISSIPPI DENTISTS  
COUNTY AND CITY DISTRIBUTION BY AGE GROUP AND BY RACE  
1965-1970 (Cont.)

Washington County	Total	Rate per 10,000	Age Groups				Race	
			Under 40	40-49	50-59	60 and over	White	Nonwhite
Ireland	4	6.5	2	1	0	1	4	0
1965								
1966	4	6.5	2	1	0	1	4	0
1967	4	6.6	1	2	0	1	4	0
1968	3	4.9	1	2	0	0	3	0
1969	3	5.0	1	2	0	0	3	0
1970	2	1.0	0	1	1	0	2	0



population is predominantly non-white, no non-white dentists maintained practices in any of the six years for which data are shown.

A rather limited set of data shown in Table IV-A-23 is available on registered nurses residing in Bolivar and Washington Counties in 1972. It should be noted that although these data are organized by place of residence of the nurses, the likelihood is that registered nurses residence and place of work are not synonymous. Table IV-A-23 indicates basically that Washington County again fares better than Bolivar County in terms of the available registered nurses (23.7 and 13.6 per 10,000 population, respectively). However, in Bolivar County, there appears to be a better distribution of nurses in places other than the largest city (Cleveland). Where there are a large number of nurses residing (e.g., Cleveland, Mound Bayou, Greenville), the reason appears to be related to presence of hospitals.

#### Miscellaneous Information on Population Status - Cripple Children

Table IV-A-24 shows some rather limited information regarding the cripple children (Department of Health, Education and Welfare supported) programs in Bolivar and Washington Counties. While the number of participants in this program is rather small (as would be expected since crippled children's proportion of total population is small), the statistics indicate that since 1965, the number of children participating in the program has increased three or more times in both counties. This indicates an extension of the service rather than an increase in the number of crippled children.

#### Ambulatory Care and Immunizations

Tables IV-A-25 and IV-A-26 present data concerning services provided by the County Health Departments from the offices in Cleveland and Greenville and from various clinics, distributed strategically around the counties and services by the county health officer periodically throughout the fiscal year. The locations of the clinics along with other health facilities are depicted in Figure IV-A-1. The data for 1965-1970, shown in Tables IV-A-25 and IV-A-26 were extracted from year-end tabulations of county health department activities. These tabulations are submitted quarterly to the State Health Department. In extracting out these data, we were rather parsimonious and concentrated primarily on quantifiable items such as number of admissions and immunizations. To attempt to indicate the extent of coverage, the data presented in Tables IV-A-25 and IV-A-26 are expressed in terms of the number of cases per 10,000 county population.

The statistics generally indicate that the Washington County Health Department services, in terms of venereal disease and tuberculosis control, chronic illness, child and adult hygiene, were more extensive and better maintained over time than similar services provided in Bolivar County. This could suggest that the Mound Bayou project with some eleven outreach stations in different parts of Bolivar County (see Figure IV-A-1) is providing these services, rather than the Bolivar County Health Department. Particularly interesting to note is that many of the services provided by the Bolivar

TABLE IV-A-23  
REGISTERED NURSES LISTED BY ADDRESS  
BOLIVAR AND WASHINGTON COUNTIES MISSISSIPPI, 1971

		Rate per 10,000*
Bolivar County:	67	13.6
Cleveland	30	22.5
Mound Bayou	13	60.9
Shaw	6	23.9
Boyle	5	58.1
Shelby	4	15.1
Benoit	3	63.4
Rosedale	2	7.7
Gunnison	1	18.3
Merigold	1	13.0
Pace	1	15.9
Scott	1	-
Washington County:	167	23.7
Greenville	149	35.6
Leland	12	20.0
Hollandale	3	9.2
Arcola	1	19.3
Avon	1	-
Winterville	1	-

\*Since no estimates for 1971 were available, 1970 Census of Population was used to calculate rates.

Source: Mississippi State Department of Health

TABLE IV-A-24

Number Participating in Crippled Childrens Program

Bolivar and Washington Counties Mississippi - 1965-70

	White	Non-White	Male	Female	Race Unknown	Total
<u>1965</u>						
Bolivar	4	5	7	2	-	9
Washington	7	16	15	8	-	23
<u>1966</u>						
Bolivar	2	12	9	5	-	14
Washington	2	11	8	5	-	13
<u>1967</u>						
Bolivar	6	9	10	5	-	15
Washington	12	17	15	14	-	29
<u>1968</u>						
Bolivar	7	7	9	7	2	16
Washington	8	38	26	20	-	46
<u>1969</u>						
Bolivar	1	25	20	6	-	26
Washington	13	41	33	21	-	54
<u>1970</u>						
Bolivar	7	25	12	20	-	32
Washington	12	64	50	28	2	78

Source: Mississippi State Department of Health

TABLE IV-A-25  
Tabulation of Activities 1965-1970  
Bolivar County, Miss.  
Health Department

Item	1965			1966			1967			1968			1969			1970		
	Total	Rate Per	To Date	Total	Rate Per	To Date	Total	Rate Per	To Date	Total	Rate Per	To Date	Total	Rate Per	To Date	Total	Rate Per	To Date
A. Acute Communicable Disease Control																		
1. Admissions to Medical Ser.	4	0.7	1	1	.2	1	1	.2	0	0	0	0	0	0	0	0	0	0
2. Admissions to Nursing Ser.	5	0.9	2	2	.3	13	13	2.3	20	3.7	2	.4	0	0	0	0	0	0
Immunizations																		
1. Smallpox, initial Vac.	1114	191.0	481	81.5	44.9	722	722	132.1	364	69.2	266	53.8	266	69.2	266	53.8	266	69.2
2. Smallpox, Revaccination	582	99.8	148	25.1	34.6	6504	6504	1190.1	242	46.0	294	59.5	294	46.0	294	59.5	294	46.0
3. Diphtheria, basic ser.	1250	214.2	722	122.4	*	*	*	*	*	*	*	*	*	*	*	*	*	*
4. Diphtheria, booster	1234	211.5	1393	236.1	*	*	*	*	*	*	*	*	*	*	*	*	*	*
5. Whooping cough, basic series	924	158.4	668	113.2	*	*	*	*	*	*	*	*	*	*	*	*	*	*
6. Whooping cough, booster	392	67.2	683	115.7	*	*	*	*	*	*	*	*	*	*	*	*	*	*
7. Tetanus, basic series	1250	214.4	722	122.4	*	*	*	*	*	*	*	*	*	*	*	*	*	*
8. Tetanus, booster	1234	211.5	1393	236.1	*	*	*	*	*	*	*	*	*	*	*	*	*	*
9. Poliomyelitis, basic series	889	152.9	708	112.0	75.5	557	557	101.9	418	79.4	387	78.3	387	79.4	387	78.3	387	79.4
10. Poliomyelitis, booster	622	106.6	910	154.2	47.1	405	405	74.1	391	74.3	245	49.6	245	74.3	245	49.6	245	74.3
11. Typhoid, basic series	1155	198.0	12	2.0	.9	12	12	2.2	18	3.4	3	.6	3	3.4	3	.6	3	3.4
12. Typhoid, booster	275	47.1	12	2.0	4.0	39	39	7.1	60	11.4	13	2.6	13	11.4	13	2.6	13	11.4
13. Influenza immun., basic series	29	5.0	5	.8	3.8	32	32	5.9	82	15.6	46	9.3	46	15.6	46	9.3	46	15.6
14. Influenza, booster	74	12.7	70	11.9	13.0	62	62	11.3	273	51.9	216	43.7	216	51.9	216	43.7	216	51.9
15. DPT, basic series	654	113.7	654	113.7	76.4	511	511	93.5	433	82.3	368	74.5	368	82.3	368	74.5	368	82.3
16. DPT, booster	473	82.3	473	82.3	82.3	59	59	10.8	10	1.9	9	1.8	9	1.9	9	1.8	9	1.9
17. DT, basic series	654	113.7	654	113.7	113.7	9261	9261	169.5	446	84.8	850	172.0	850	84.8	850	172.0	850	84.8
18. DT, booster																		
B. Venereal Disease Control																		
1. Admissions to Medical Ser.	140	24.0	130	22.0	28.2	154	154	28.2	169	32.1	165	33.4	165	32.1	165	33.4	165	32.1
2. Admissions to Nursing Ser.	5	.9	14	2.4	5.2	30	30	5.2	14	1.8	13	2.6	13	1.8	13	2.6	13	1.8

\*Beginning in 1967, individual series discontinued. See DPT (Diphtheria, whooping cough, tetanus) and DT (Diphtheria and tetanus) in year 1967-1970

TABLE IV-A-25 Cont.  
Tabulation of Activities 1965-1970  
Bolivar County, Miss.  
Health Department

Item	1965			1966			1967			1968			1969			1970		
	Total	Rate Per	To Date	Total	Rate Per	To Date	Total	Rate Per	To Date	Total	Rate Per	To Date	Total	Rate Per	To Date	Total	Rate Per	To Date
3. Admissions to V.D.I. (Spec. Investigation) Service	36	6.2	47	26	8.0	4.5	21	3.8	39	7.4	49	9.9						
C. Tuberculosis Control																		
1. Indiv. adm. to Med. Serv.	0	0	0	359	62.4	0	0	0	0	0	0	0	0	0	0	0	0	0
2. Indiv. adm. to Nursing Serv.	229	39.3	258	217	43.7	37.7	458	83.8		255	48.5	441	89.2					
D. Chronic Illness Services																		
Heart Disease																		
1. Indiv. adm. for service	14	2.4	11	29	1.9	5.0	29	5.3	34	6.5	25	5.1						
E. Maternity Service 15-44																		
1. Adm. to Antepartum Med. Serv.	185	97.0	115	211	50.0	107.1	144	79.1	132	74.7	125	68.4						
2. Adm. to Antepartum Nurs. Serv.	711	372.9	533	399	213.2	202.5	423	232.4	296	167.5	329	180.0						
F&G&H Hygiene 0-17**																		
1. Indiv. adm. to medical well child conference	9	3.6	8	20	3.2	8.8	62	24.6	9	3.8	7	3.3						
2. Indiv. adm. to medical pediatric clinic	0		1	13	.4	5.7	5	2.0	8	3.3	1	.5						
3. Indiv. adm. to Nurs. Serv.	1858	743.0	1324	694	537.6	304.0	635	251.9	352	147.0	355	166.0						
I. Adult Hygiene 18 and over***																		
1. Indiv. adm. to Med. Serv.	1	3.0	299	34	87.0	9.8	2	.7	0	0	2	.7						
2. Indiv. adm. to Nurs. Serv.	132	39.6	309	32	89.9	9.2	46	15.6	5	1.7	7	2.5						
3. Indiv. adm. to family planning service	379	113.7	484	381	140.8	109.9	357	121.3	261	91.0	220	78.5						

\*\*Population for 1965-1967 in age bracket 0-17 not available, used population for 0-14 age bracket

\*\*\*Population for 1965-1967 in age bracket 18 and over not available, used population for 15 and over age bracket

SOURCE: Bolivar County Department of Health



TABLE IV-A-26

TABULATION OF ACTIVITIES (1965 - 1970)  
WASHINGTON COUNTY, MISSISSIPPI HEALTH DEPARTMENT

	1965			1966			1967			1968			1969			1970		
	Total To Date	Rate Per 10,000 Pop.	Total Pop.	Total To Date	Rate Per 10,000 Pop.	Total Pop.	Total To Date	Rate Per 10,000 Pop.	Total Pop.	Total To Date	Rate Per 10,000 Pop.	Total Pop.	Total To Date	Rate Per 10,000 Pop.	Total Pop.	Total To Date	Rate Per 10,000 Pop.	
<b>A. Acute Communicable Disease Control</b>																		
<b>Immunization</b>																		
1. Smallpox, initial vac.	1698	214.5	1192	149.6	1032	132.1	1026	134.0	912	121.4	783	111.0						
2. Smallpox, revaccination	1613	203.7	768	96.4	1080	138.2	34.71	453.4	897	119.4	1295	183.5						
3. Diphtheria, basic series	1096	138.4	1001	125.6	*	*	*	*	*	*	*	*						
4. Diphtheria, booster	3196	403.7	2256	283.1	*	*	*	*	*	*	*	*						
5. Whooping Cough, basic ser.	937	118.4	812	101.9	*	*	*	*	*	*	*	*						
6. Whooping Cough, booster	1002	126.6	877	110.0	*	*	*	*	*	*	*	*						
7. Tetanus, basic series	1096	138.4	1001	125.6	*	*	*	*	*	*	*	*						
8. Tetanus, booster	3196	403.7	2256	283.1	*	*	*	*	*	*	*	*						
9. Poliomyelitis, basic ser.	889	112.3	819	102.8	798	102.1	701	91.6	777	103.4	779	110.2						
10. Poliomyelitis, booster	179	22.6	522	65.5	534	68.3	736	96.2	636	84.6	622	83.1						
11. Typhoid, basic series	954	120.5	42	5.3	47	6.1	41	5.4	20	2.7	17	2.4						
12. Typhoid, booster	956	108.1	52	6.5	103	13.2	46	6.0	55	7.3	16	2.3						
13. Influenza Imm. basic ser.	172	21.7	127	15.9	139	17.8	187	24.4	166	22.1	123	17.4						
14. Influenza booster	234	29.6	236	29.6	251	32.1	282	36.8	316	42.0	275	39.0						
15. DPT basic series	--	--	--	--	749	95.8	623	81.4	737	98.1	700	99.2						
16. DPT booster	--	--	--	--	587	75.1	400	52.2	659	87.1	500	70.8						
17. DT basic series	--	--	--	--	136	17.4	241	31.5	78	10.4	92	13.0						
18. DT booster	--	--	--	--	2832	362.4	5395	704.8	1672	222.5	3018	427.6						
<b>B. Venereal Disease Control</b>																		
1. Adm. to Medical Services	455	57.5	250	31.4	317	40.6	336	43.9	226	30.1	351	49.7						
2. Adm. to Nursing Services	534	67.5	312	39.2	343	43.9	109	14.2	77	10.3	102	14.4						
3. Adm. to V.D.I. (Special Investigation) Services	437	55.2	519	65.1	325	41.6	543	70.9	444	59.1	423	59.9						
Beginning in 1967, individual series discontinued. See DPT (Diphtheria, Pertussis, Tetanus) and DT (Diphtheria, Tetanus) in years 1967-1970.																		

\* Beginning in 1967, individual series discontinued. See DPT (Diphtheria, Pertussis, Tetanus) and DT (Diphtheria, Tetanus) in years 1967-1970.

TABLE IV-A-26  
TABULATION OF ACTIVITIES (1965 - 1970)  
WASHINGTON COUNTY, MISSISSIPPI HEALTH DEPARTMENT

	1965			1966			1967			1968			1969			1970		
	Total To Date	Rate Per 10,000 Pop.	Total To Date	Rate Per 10,000 Pop.	Total To Date	Rate Per 10,000 Pop.	Total To Date	Rate Per 10,000 Pop.	Total To Date	Rate Per 10,000 Pop.	Total To Date	Rate Per 10,000 Pop.	Total To Date	Rate Per 10,000 Pop.	Total To Date	Rate Per 10,000 Pop.	Total To Date	Rate Per 10,000 Pop.
<b>C. Tuberculosis (Control)</b>																		
1. Adm. to Medical Services	6	.8	8	1.0	8	1.0	1	.1	0	0	0	.1	0	0	1	.1	1	.1
2. Adm. to Nursing Services	779	98.4	693	87.0	724	92.7	865	113.0	833	110.9	833	110.9	833	110.9	693	98.2	693	98.2
<b>D. Chronic Illness Services</b>																		
<b>Heart Diseases</b>																		
1. Adm. for Service	51	6.4	34	4.3	104	13.3	158	20.6	152	20.2	152	20.2	152	20.2	346	49.0	346	49.0
<b>E. Maternity Service (15-44)</b>																		
1. Adm. to Antepartum	330	125.5	324	120.1	336	135.2	28	11.1	232	95.0	232	95.0	232	95.0	313	118.8	313	118.8
2. Adm. to Antepartum	538	204.6	514	190.5	511	205.6	452	179.2	433	177.3	433	177.3	433	177.3	323	122.6	323	122.6
3. Adm. to Nursing Service																		
<b>F. G. &amp; H. Hygiene (0-17)**</b>																		
1. Adm. to Med. Well Child	358	110.4	233	72.6	310	95.0	10	2.9	99	30.3	99	30.3	99	30.3	34	11.4	34	11.4
Conference																		
2. Adm. to Medical Pediatric	22	6.8	32	10.0	36	11.0	32	9.3	60	18.4	60	18.4	60	18.4	57	22.5	57	22.5
Clinic	2992	922.4	2532	789.5	2389	732.2	2088	604.2	1881	576.2	1881	576.2	1881	576.2	1675	551.6	1675	551.6
3. Adm. to Nursing Service																		
<b>I. Adult Hygiene (18 &amp; Over)***</b>																		
1. Adm. to Medical Service	34	7.3	35	7.4	240	52.7	267	63.6	330	77.6	330	77.6	330	77.6	248	60.8	248	60.8
2. Adm. to Nursing Service	1746	373.6	751	157.0	34	7.5	39	9.3	252	59.3	252	59.3	252	59.3	335	82.2	335	82.2
3. Adm. for Family Planning	1385	296.4	1016	213.4	1024	225.0	426	101.4	502	118.1	502	118.1	502	118.1	764	187.4	764	187.4
Service																		

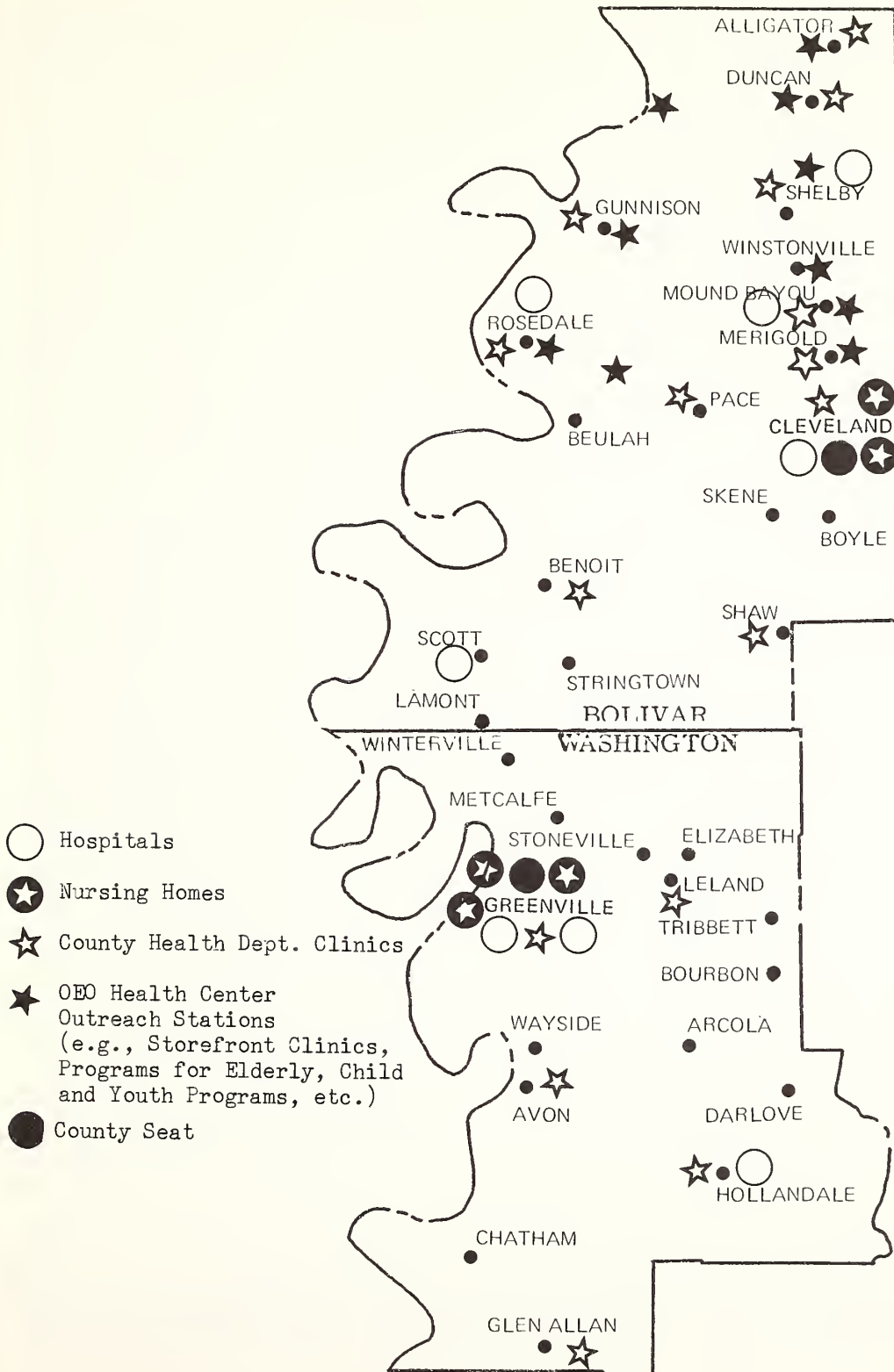
\*\* Population for 1965-1967 in age bracket 0-17 not available, used population for 0-14 age bracket.

\*\*\* Population for 1965-1967 in age bracket 18 and over not available, used population for 15 and over age bracket.

SOURCE: Washington County Health Department.

FIGURE IV-A-1

# HEALTH FACILITIES BOLIVAR AND WASHINGTON COUNTIES



County Health Department started to wane about 1968 when the Mound Bayou facilities became fully operational. Examples of this wane and then decline include maternity services, child hygiene and adult hygiene. Other services such as chronic illness services - heart disease, acute communicable disease, and the like - do not appear to be widespread activities in Bolivar County. This is not an unexpected finding. The County Health Department with its small staff cannot be expected to compete with the Mound Bayou program with its outreach stations and its fleet of 30 GSA vehicles used to disperse needed services throughout the county.

The immunization data obtained from the health departments are rather difficult to interpret since no data are available on the source of the immunization. Immunization data shown for Los Angeles (Stage II report) indicated that a prime source for the increase in immunization rates is school immunization programs where every child in school is immunized. In addition to influencing immunization rates by public policy, several other factors need to be kept in view when interpreting immunization data. First, immunizations are administered in terms of a scheduled series with the initial series being administered early in life (except D.T.) and boosters administered in intervals of five or ten years, depending on the kind of immunization. Therefore, immunization rates are subject to cyclical vicissitudes. Moreover, immunization rates for any given year do not indicate the total extent of immunization because of the periodicity of administering immunization. Therefore, a low rate of immunization in one year does not necessarily reflect neglect or lack of services, especially if in previous years or succeeding years immunization rates are on a higher level.

Secondly, it is necessary to keep the so-called "herd immunization factor" in view.<sup>6</sup> This basically means that the protection a community receives from a disease is greater than the sum of all individuals who are immunized against that disease. The reason for this is that if the proportion of persons immunized against a disease reaches a certain undefined level, the disease organism is unable to maintain itself in the community, and expires. An example of the herd immunization factor is smallpox, which has been virtually eliminated as a public health hazard in all but the remote areas of the world.

Lastly, immunity following immunization is not necessarily maintained through life. This would indicate that boosters, re-immunizations and re-vaccinations are necessary to maintain immunity. Therefore, an index of community protection against diseases needs to reflect boosters as well as initial immunizations.

Given these observations, certain interpretations can be made on immunization data. First, the cyclical aspects of immunization appear to be borne out by the data on at least the basic immunization series such as smallpox, diphtheria, tetanus, D.P.T., and to some extent, polio. Other kinds of immunizations, such as influenza basic series and influenza boosters, appear to be administered sparingly, but steadily, over the six-year period in both counties.

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6. See Payne, Anthony M.M., "The Basis of Preventive Measures," Preventive Medicine, D.W. Clark and B. MacMahon, eds. Little, Brown and Co. 1967, pp. 19-38.



## Hospitals and Nursing Homes

The statistics we have been able to compile on hospitals and nursing homes are presented in Tables IV-A-27 through IV-A-30. Tables IV-A-27 and IV-A-28 show selected statistical indices of hospital utilization in Bolivar and Washington Counties for 1969 and 1971. These tables also compare some of these indicators with statistics for the State of Mississippi as a whole. In terms of bed availability per 1,000 population, Washington County fared better than Bolivar County in both years. On other indicators, the difference between the two counties in hospital utilization is somewhat ambiguous. In general, the situation in Bolivar County between 1969 and 1971 was rather static, with only slight improvement. A slight increase occurred in number of beds available per 1,000 population, admissions per bed, and in length of stay, while a more marked increase in number of admissions, patient days, and bed occupancy was apparent. In general, this indicates a more efficient utilization of facilities in 1971 than in 1969. Washington County in 1971 showed a decrease in total beds and in average length of stay, but an increase in total admissions, admissions per bed, and percent occupancy. Although only two years of data were available, some pattern may be noted. This pattern is difficult to interpret; comparing 1971 to 1969, fewer beds were utilized by more patients staying shorter periods of time.

In addition to the data discussed above, some limited data on hospital utilization were available from a one-day hospital census conducted in Mississippi on October 11, 1972. These data are shown in Table IV-A-29. Since the data refer to only one point in time, and as of this writing, no other census is available for comparison, few analyses of the data can be performed. Essentially, all that can be done is to point out differences between Bolivar and Washington Counties and between racial groups.

The first thing the data show is that non-whites appear to be under-represented in terms of utilization of hospitals - especially in Bolivar County. Of 165 patients in Bolivar County hospitals on the census day, 77 or 47% were non-whites, even though non-whites constitute more than half of the population in Bolivar County. The differences between the two counties are that patients in Bolivar County tend to be older and to stay in hospital an average one and one-half days longer than in Washington County.

Table IV-A-30 provides data on skilled and intermediate nursing homes for 1965 to 1971 located in Bolivar and Washington Counties. By 1970, only two nursing homes were operating in Bolivar County - both of these were located in Cleveland and both were skilled nursing homes. The bed capacity of the nursing homes in Cleveland was 22.9 beds per 10,000 population, or 226.7 beds per 10,000 population over 65 years of age. This constitutes an increase since 1965, due mostly to the opening of the second nursing home in 1969.

These bed-capacity figures do not tell the whole story. The major statistic needed to evaluate this capacity is a race breakdown of utilizers, but these were unavailable. Also, patient origin data would be helpful since nursing home clientele are not necessarily from the population residing in the place in which the nursing homes are located. If the nursing homes in Cleveland mostly serve the area around Cleveland, the implication is lack of nursing home services for the remote rural parts of Bolivar County.



TABLE IV-A-27  
 STATISTICAL INDICES OF SELECTED HOSPITAL UTILIZATION  
 BOLIVAR AND WASHINGTON COUNTIES  
 FISCAL YEAR 1969

	Bolivar	Washington
Population in 1000's	52.6	75.1
Total Existing Beds	175	389
Beds per 1000 population	3.3	5.2
Percent above/below state average	-4.3	-2.4
Total Admissions	7609	11,018
Admissions per 1000	144.7	146.7
Admissions per bed	43.5	28.3
Percent above/below state average	+21.8	+6.6
Annual Bed Days Available	63,875	141,985
Bed days per 1000 population	1214.3	1890.6
Percent above/below state average	-14.1	+33.8
Total Patient Days	44,583	85,372
Patient per 1000 population	847.6	1136.8
Percent above/below state average	-61.0	-47.7
Average Length of Stay	5.9	11.2
Percent above/below state average	-7.3	-2.0
Percent Occupancy	69.8	60.1
Percent above/below state average	-9.1	-18.8

SOURCE: Division of Comprehensive Health Planning, Office of the Governor,  
 State of Mississippi

TABLE IV-A-28  
SELECTED STATISTICAL INDICES OF HOSPITAL UTILIZATION  
BOLIVAR AND WASHINGTON COUNTY  
FISCAL YEAR 1971

	Bolivar	Washington
Population in 1000's	49.4	70.5
Total Existing Beds	178	347
Beds per 1000 population	3.60	4.92
Percent above/below state average	-18.6	11.3
Total Admissions	8,544	12,319
Admissions per 1000	173.0	174.7
Admissions per bed	48.00	35.50
Percent above/below state average	+21.4	-10.2
Total Patient Days	55,063	93,293
Patient days per 1000 population	1114	1322
Percent above/below state average	-07.8	+09.3
Average Length of Stay	6.44	7.57
Percent above/below state average	-06.8	+09.5
Percent Occupancy	84.8	73.7
Percent above/below state average	13.6	-1.2

SOURCE: Division of Comprehensive Health Planning, Office of the Governor,  
State of Mississippi

TABLE IV-A-29  
ONE DAY HOSPITAL CENSUS, OCTOBER 11, 1972  
BOLIVAR AND WASHINGTON COUNTY HOSPITALS

	Bolivar		Washington	
Median length of stay if discharged on Census day	7.5 days		6.0 days	
Range of length of stay	2 - 17		2 - 23	
Median age of patient				
Race				
White	54.0		47.0	
Nonwhite	55.9		51.6	
Sex				
Male	62.3		52.5	
Female	41.0		46.2	
Percent discharged on Census day				
Race				
White	11.4		14.3	
Nonwhite	13.0		10.9	
Sex				
Male	10.8		14.0	
Female	13.0		11.6	
Medical service				
OB and GYN	12		32	
Mental psycho	1		0	
Surgery	36		40	
Medical, orthopedic, urology	91		141	
Pediatric, all children < 15 except newborns	12		11	
Newborns	13		12	
		<u>Percent</u>		<u>Percent</u>
Total white patients	88	53	126	53
Male	36	41	48	38
Female	52	59	78	62
Total nonwhite patients	77	47	110	47
Male	29	38	59	53
Female	48	62	51	47

TABLE IV-A-30  
SKILLED & INTERMEDIATE NURSING CARE, 1965-1971

	Number of Beds					Full Time Employees*												Total
	Private	Semi-Private	Ward	Total	No. of Beds per 10,000 Pop.	No. of Beds per 10,000 Pop. 65 and Over	Adm.	Clerical	R.N.	LPN	Aide & Ord.	House-keeper and Maid	Laundry Workers	F.S. Sup.	Cooks Other Food Workers	Other		
Bolivar County																		
Skilled Nursing																		
1965 Cleveland NH	18	20		38	6.5	89.1	0	NA	*adm. 1	2	9	6		NA	4		22	
1966 Cleveland NH	18	20		38	6.4	82.6		NA	1	4	9	6			2		14	
1967 Cleveland NH	18	20		38	6.6	76.0	1	NA	1	2	9	6			4		23	
1968 Cleveland NH	18	20		38	7.0	74.8	1	NA	1	3	9	6			4		24	
1969 Total	21	92		113	21.5	237.2	2	2	2	7	28	9	1	1	9		61	
Care-Inn Cleveland	3	72		75			1	2	1	4	19	4	1	1	5		38	
Cleveland NH	18	20		38			1		1	3	9	5			4		23	
1970 Total	21	92		113	22.9	226.7	2	1	3	7	30	9	1	1	9		63	
Care-Inn Cleveland	3	72		75			1	1	2	4	20	4	1	1	5		39	
Cleveland NH	18	20		38			1		1	3	10	5			4		24	
1971 Total**	21	92		113			2	1	2	9	36	8		1	9		68	
Care-Inn Cleveland	3	72		75			1	1	1	5	24	3		1	5		41	
Cleveland NH	18	20		38			1		1	4	12	5			4		27	

\*No employees were listed in the following } ADA diet, phy. ther., par, under full time work  
categories or information not available } Laundry work under part-time work

\*\*Rates not computed because of unavailability of 1971 population estimates.

TABLE IV-A-30 (cont.)  
SKILLED & INTERMEDIATE NURSING CARE, 1965-1971

Bolivar County	Part Time Employees*														Total
	Adm.	Clerical	R.N.	LPN	Aide & Ord.	House-keeper	ADA	F.S. Sup.	Cooks Other Food Workers	Phy. Ther.	Phar.	Other	Employees		
Skilled Nursing															
1965 Cleveland NH	1	NA		1				NA		NA			2	24	0.6
1966 Cleveland NH		NA			2						NA		1	25	0.7
1967 Cleveland NH		NA		3							NA		3	26	0.7
1968 Cleveland NH		NA		2							NA		2	26	0.7
1969 Total		2		5	5	2					1		16	77	0.7
Care-Inn Cleveland				2	5	2							10	48	0.6
Cleveland NH		2		3							1		6	29	0.8
1970 Total		3	3	2	10		1	1	1		2	1	24	87	0.8
Care-Inn Cleveland		1	1		10		1		1		1		15	54	0.7
Cleveland NH		2	2	2				1			1	1	9	33	0.9
1971 Total**		2	2	5			2	1			1	1	14	82	0.7
Care-Inn Cleveland				3			1						4	45	0.6
Cleveland NH		2	2	2			1	1			1	1	10	37	1.0

\*No employees were listed in the following categories or information not available

ADA diet, phy. ther., par, under full time work  
Laundry work under part-time work

\*\*Rates not computed because of unavailability of 1971 population estimates.



TABLE IV-A-30 (cont.)  
SKILLED & INTERMEDIATE NURSING CARE, 1965-1971

	Number of Beds					Full Time Employees*											
	Private	Semi-Private	Ward	Total	No. of Beds per 10,000 Population	No. of Beds per 10,000 Pop. 65 & Over	Adm.	Clerical	R.N.	LPN	Aide & Ord.	Housekeeper & Maid	Laundry Workers	F.S. Sup.	Cooks Other Food Workers	Other	Total
Washington County																	
Skilled Nursing																	
1965 TOTAL	45	10	16	71	9.0	110.4	2	NA		2	18	3		NA	5		30
Arnold Avenue NH	5	8	16	29			0	NA		2	8	1		NA	1		12
Bessie J. Taylor NH	40	2		42			2	NA			10	2		NA	4		18
1966 TOTAL (None)	4	16	21	41	5.2	60.4		NA	1	5	9	1	1		2		19
1967 Arnold Ave. NH	4	16	21	41	5.4	60.8	1	NA	1	5	12	1	1		3		23
1968 Arnold Ave. NH	4	16	21	41	5.4	61.5	0		1	4	12	1		1	3		22
1969 Arnold Ave. NH	4	16	21	41	22.8	254.5	3	1	2	8	44	7	1	2	8		76
1970 TOTAL	10	130	21	161			3		1	3	12	1	1	1	3		22
Arnold Avenue NH	4	16	21	41			2	1	1	5	32	6	1	1	5		54
Greenville Conv. H.	6	114	21	120			4	6	7	16	75	12	4	4	19	1	148
1971 TOTAL**	30	286	21	337													
Arnold Avenue NH	4	16	21	41			1	1	1	3	12	1	1	1	3		23
Autumn Leaves NH	8	52		60			1	1	1	4	18	2		1	3		31
Greenville Conv. H.	6	114		120			1	2	1	5	31	4	2	1	6		53
Medi Center Greenville	12	104		116			1	3	4	4	14	5	1	1	7	1	41
Intermediate Nursing																	
1965 TOTAL (None)	43	18	21	82	10.3	121.7	2	NA		4	16	5		2	4		33
1966 TOTAL	4	16	21	41			2	NA		3	7	2		2	2		14
Arnold Avenue NH	39	2		41			2	NA		1	9	3		2	2	NA	19
Bessie J. Taylor NH	39	2		41	5.2	60.4		NA		1	10	3		1	3		20
1967 Bessie J. Taylor NH	39	2		41	5.4	60.8	1	NA	1		11	3		1	3	NA	20
1968 Bessie J. Taylor NH	39	2		41	5.3	60.0	1		1		10	4		1	3		20
1969 Bessie J. Taylor NH	40			40	5.7	63.2	1		1		10	3		1	4	1	21
1970 Bessie J. Taylor NH	40			40			1		1		10	3		1	2		19
*1971 Bessie J. Taylor NH	40			40			1		1		10	3		1	2		19

\*No employees were listed in the following } ADA diet, Phy. Ther. Par, under full time work  
categories or information not available } Laundry work under part time work

\*\*Rates not computed because of unavailability of population estimates for 1971.

TABLE IV-A-30 (cont.)  
SKILLED & INTERMEDIATE NURSING CARE, 1965-1971

	Part Time Employees*												Total			
	Adm.	Clerical	R.N.	LPN	Aide &	House-keeper	ADA	F.S.	Cook	Phy. Ther.	Phar.	Other	Total	Employees	Per Bed	
Washington County																
Skilled Nursing																
1965 TOTAL	1	NA						NA			NA		1	31	0.4	
Arnold Avenue NH		NA						NA			NA			12	0.4	
Bessie J. Taylor NH	1	NA						NA			NA		1	19	0.5	
1966 TOTAL (None)																
1967 Arnold Avenue NH		NA									NA			19	0.5	
1968 Arnold Avenue NH		NA	1								NA		1	24	0.6	
1969 Arnold Avenue NH			1						2				4	26	0.6	
1970 TOTAL				1	1		1		5		1		12	88	0.5	
Arnold Avenue NH				2			1		2				5	27	0.7	
Greenville Conv. H.				1					3		1		1	7	61	0.5
1971 TOTAL**			2	3	6	3	4		6	1			29	177	0.5	
Arnold Avenue NH				1			1		1				5	28	0.7	
Autumn Leaves NH				1	2	1	1		2				7	38	0.6	
Greenville Conv. H.				1			1						4	57	0.5	
Medi Center Greenville			2	1	4		1		3	1		1	13	54	0.5	
Intermediate Nursing																
1965 TOTAL (None)		NA	1		2						NA		5	38	0.5	
1966 TOTAL		NA			2						NA	2	2	16	0.4	
Arnold Avenue NH		NA	1		2						NA		3	22	0.5	
Bessie J. Taylor NH		NA	1								NA		3	23	0.6	
1967 Bessie J. Taylor NH		NA									NA		2	22	0.5	
1968 Bessie J. Taylor NH		NA									NA		2	22	0.6	
1969 Bessie J. Taylor NH		1										1	2	22	0.5	
1970 Bessie J. Taylor NH		1							2			1	2	23	0.6	
**1971 Bessie J. Taylor NH		1										1	4	23	0.6	

\*No employees were listed in the following categories or information not available  
 ADA diet, Phy. Ther., Par, under full time work,  
 Laundry work under part time work  
 \*\*Rates not computed because of unavailability of population estimates for 1971.

TABLE IV-A-30 (cont.)  
SKILLED & INTERMEDIATE NURSING CARE, 1965-1971

	Patients Served During Year							Number of Patients					
	Under 18	18-44	45-64	65-74	75-84	85 & Over	Total	Days of Patient Care During Year	12-31	New	Discharge	Died	12-31
Bolivar County													
Skilled Nursing													
1965 Cleveland NH	-	-	6	14	38	14	72	12374	11	7	-	7	11
1966 Cleveland NH	-	-	4	13	25	12	54	13082	11	3	3	3	8
1967 Cleveland NH	-	-	3	9	29	12	53	12254	8	6	3	3	8
1968 Cleveland NH	-	1	3	11	27	11	53	11185	8	9	6	3	8
1969 Total	-	2	6	83	27	24	142	18189	8	31	16	3	20
Care-Inn Cleveland	-	1	2	74	6	9	92	8174	-	24	9	2	13
Cleveland NH	-	1	4	9	21	15	50	10015	8	7	7	1	7
1970 Total	-	1	10	35	96	68	210	29973	20	57	36	10	31
Care-Inn Cleveland	-	-	8	27	75	50	160	19730	13	50	34	8	21
Cleveland NH	-	1	2	8	21	18	50	10243	7	7	2	2	10
1971 Total**	-												
Care-Inn Cleveland	-	1	14	25	66	45	151	23218	21	29	15	6	29
Cleveland NH	-	1	2	9	28	14	54	12322	10	9	5	4	10

\*No employees were listed in the following categories or information not available: ADA diet, phy. ther., par, under full time work of 1971 population estimates. \*\*Rates not computed because of unavailability of 1971 population estimates.

TABLE IV-A-30 (cont.)  
SKILLED & INTERMEDIATE NURSING CARE, 1965-1971

Number of Patients Female						Ambulation Status		
	12-31	New	Disch	Died	12-31	Amb	Non Amb	Total Patients
Bolivar County								
Skilled Nursing								
1965 Cleveland NH	23	31	13	14	27	12	26	38
1966 Cleveland NH	27	13	10	5	25	10	23	33
1967 Cleveland NH	25	14	9	9	21	5	24	29
1968 Cleveland NH	21	15	9	2	25	6	27	33
1969 Total	25	78	42	12	49	30	39	69
Care-InnCleveland	-	68	32	7	29	24	18	42
Cleveland NH	25	10	10	5	20	6	21	27
1970 Total	49	84	50	19	64	32	63	95
Care-InnCleveland	29	68	42	14	41	24	38	62
Cleveland NH	20	16	8	5	23	8	25	33
1971 Total**	-	-	-	-	-	-	-	-
Care-InnCleveland	40	61	40	16	45	29	45	74
Cleveland NH	23	12	10	2	23	6	27	33

\*No employees were listed in the following categories or information not available: ADA diet, phy. ther., par, under full time work, laundry work under part-time work

\*\*Rates not computed because of unavailability of 1971 population estimates.

TABLE IV-A-30 (cont.)  
SKILLED & INTERMEDIATE NURSING CARE, 1965-1971

Washington County	Patients Served During Year						Total	Days of Patients Care During Year
	Under 18	18-44	45-64	65-74	75-84	85 & Over		
<b>Skilled Nursing</b>								
1965 Total	-	-	4	32	55	23	114	23280
Arnold Avenue NH	-	-	2	6	21	14	43	8957
Bessie J. Taylor NH	-	-	2	26	34	9	71	14323
1966 Total (None)	-	-	-	-	-	-	-	-
1967 Arnold Avenue NH	-	-	2	7	15	37	61	16581
1968 Arnold Avenue NH	-	-	2	5	19	36	62	15209
1969 Arnold Avenue NH	-	-	3	8	15	29	55	14186
1970 Total	-	-	16	50	73	65	204	33512
Arnold Avenue NH	-	-	3	9	13	31	56	13832
Greenville Conv. H.	-	-	13	41	60	34	148	19680
1971 Total**	-	16	32	163	216	121	548	64924
Arnold Avenue NH	-	-	3	7	9	26	45	13211
Autumn Leaves NH	-	-	2	9	34	24	69	8430
Greenville Conv. H.	-	2	19	54	67	49	191	36674
Medi Center, Greenville	-	14	8	93	106	22	243	6609
<b>Intermediate Nursing</b>								
1965 Total (None)	-	2	2	27	54	33	118	27060
1966 Total	-	2	1	11	25	18	57	12711
Arnold Avenue NH	-	-	1	16	29	15	61	14349
Bessie J. Taylor NH	-	-	1	15	27	16	59	13345
1967 Bessie J. Taylor NH	-	-	1	16	24	13	54	13340
1968 Bessie J. Taylor NH	-	-	1	9	30	12	53	13881
1969 Bessie J. Taylor NH	-	-	2	8	30	15	55	12304
1970 Bessie J. Taylor NH	-	-	2	10	24	15	49	13328
1971** Bessie J. Taylor NH	-	-	-	-	-	-	-	-

\*No employees were listed in the following categories or information not available:  
ADA diet, phy. ther., par, under full time work; laundry work under part-time work

\*\*Rates not computed because of unavailability of 1971 population estimates.



TABLE IV-A-30 (cont.)  
SKILLED & INTERMEDIATE NURSING CARE, 1965-1971

	Number of Patients										Ambulation Status		Total Patients 12-31
	Male					Female							
	12-31	New	Disch	Died	12-31	12-31	New	Disch	Died	12-31	Amb	Non Amb	
Washington County													
Skilled Nursing													
1965 Total	12	8	1	5	14	55	39	34	6	54	28	40	68
Arnold Avenue NH	6	4	1	3	6	20	13	8	4	21	7	20	27
Bessie J. Taylor NH	6	4	-	2	8	35	26	26	2	33	21	20	41
1966 Total (None)													
1967 Arnold Avenue NH	6	9	4	3	8	29	17	8	5	33	18	23	41
1968 Arnold Avenue NH	8	5	-	3	10	33	16	10	8	31	21	20	41
1969 Arnold Avenue NH	10	4	2	1	11	31	10	9	2	30	16	25	41
1970 Total	11	52	20	6	37	30	111	45	13	83	30	90	120
Arnold Avenue NH	11	1	4	1	7	30	14	13	6	25	17	15	32
Greenville Conv. H	-	51	16	5	30	-	97	32	7	58	13	75	88
1971 Total**	37	148	109	22	54	83	280	190	30	143	66	131	197
Arnold Avenue NH	7	3	-	2	8	25	10	4	1	30	21	17	38
Autumn Leaves NH	-	18	5	3	10	-	51	12	3	36	27	19	46
Greenville Conv. H.	30	44	34	8	32	58	59	35	18	64	8	88	96
Medi Center, Greenville	-	83	70	9	4	-	160	139	8	13	10	7	17
Intermediate Nursing													
1965 Total (None)													
1966 Total	14	11	5	7	13	54	39	18	14	61	53	21	74
Arnold Avenue NH	6	6	1	5	6	21	24	8	8	29	21	14	35
Bessie J. Taylor NH	8	5	4	2	7	33	15	10	6	32	32	7	39
1967 Bessie J. Taylor NH	7	1	2	1	5	32	19	13	10	28	26	7	33
1968 Bessie J. Taylor NH	5	4	1	2	6	28	17	10	1	34	25	15	40
1969 Bessie J. Taylor NH	6	-	1	2	3	34	13	13	2	32	26	9	35
1970 Bessie J. Taylor NH	3	1	3	-	1	32	19	14	2	35	31	5	36
1971** Bessie J. Taylor NH	1	2	1	-	2	35	11	9	-	37	34	5	39

\*No employees were listed in the following categories or information not available:  
ADA diet, phy. ther., par, under full time work; laundry work under part-time work.

\*\*Rates not computed because of unavailability of 1971 population estimates.

TABLE IV-A-30 (cont.)  
SKILLED & INTERMEDIATE NURSING CARE, 1965-1971

Bollivar County	Disposition of Live Discharges					Reason		
	Own or Rel. Home	Hosp.	Another Nurs. Home	Other	Total	Pers. Care	Nurs. Care	Total
Skilled Nursing								
1965 Cleveland NH	10	1	2	-	13	-	38	38
1966 Cleveland NH	10	3	-	-	13	-	16	16
1967 Cleveland NH	3	9	-	-	12	-	20	20
1968 Cleveland NH	7	3	5	-	15	-	24	24
1969 Total	37	12	9	-	58			
Care-Inn Cleveland	32	9	-	-	41			
Cleveland NH	5	3	9	-	17			
1970 Total	44	34	8	-	86			
Care-Inn Cleveland	40	31	5	-	76			
Cleveland NH	4	3	3	-	10			
1971** Total	36	28	6	-	70			
Care-Inn Cleveland	32	18	5	-	55			
Cleveland NH	4	10	1	-	15			

\*No employees were listed in the following categories or information not available: ADA diet, phy. ther., par, under full time work; laundry work under part-time work

\*\*Rates not computed because of unavailability of 1971 population estimates.

TABLE IV-A-30 (cont.)  
SKILLED & INTERMEDIATE NURSING CARE, 1965-1971

Washington County	Disposition of Live Discharges					Reason	
	Own or Rel. Home	Hosp.	Another Nurs. Home	Other	Total	Pers. Care	Nurs. Care Total
Skilled Nursing							
1965 Total	21	11	3	-	35	26	21 47
Arnold Avenue NH	3	5	1	-	9	6	11 17
Bessie J. Taylor NH	18	6	2	-	26	20	10 30
1966 Total (None)							
1967 Arnold Avenue NH	4	5	3	-	12	3	23 26
1968 Arnold Avenue NH							
1969 Arnold Avenue NH	1	9	1	-	11	5	16 21
1970 Total	18	41	6	-	65		
Arnold Avenue NH	-	13	4	-	17		
Greenville Conv. H.	18	28	2	-	48		
1971 Total	162	109	38	-	299		
Arnold Avenue NH	-	3	1	-	4		
Autumn Leaves NH	10	7	-	-	17		
Greenville Conv. H.	18	40	11	-	69		
Medi Center Greenville	134	59	16	-	209		
Intermediate Nursing							
1965 Total (None)							
1966 Total	7	10	6	-	23	25	25 50
Arnold Avenue NH	1	5	3	-	9	7	23 30
Bessie J. Taylor NH	6	5	3	-	14	18	2 20
1967 Bessie J. Taylor NH	7	3	4	1	15	19	1 20
1968 Bessie J. Taylor NH	5	4	-	2	11	18	3 21
1969 Bessie J. Taylor NH	7	4	3	-	14		
1970 Bessie J. Taylor NH	5	8	4	-	17		
1971 Bessie J. Taylor NH	3	5	2	-	10		

TABLE IV-A-30 (cont.)  
SKILLED & INTERMEDIATE NURSING CARE, 1965-1971

	Source of Fees						Admissions						Place Admitted From			
	Medi-Care	Medi-Cal	Pt. &/or Rel.	V.A.	Welfare	Welfare & Other	Other	Total	Hosp.	Another Nurs. Home	Own or Rel. Home	Other	Total			
Bolivar County																
Skilled Nursing																
1965 Cleveland NH	NA	NA	38	-	-	-	-	38	9	3	26	-	38			
1966 Cleveland NH	NA	NA	16	-	-	-	-	16	5	2	9	-	16			
1967 Cleveland NH	-	NA	20	-	-	-	-	20	11	2	7	-	20			
1968 Cleveland NH	-	NA	24	-	-	-	-	24	13	-	11	-	24			
1969 Total	40	NA	30	1	38	-	-	109	81	10	18	-	109			
Care-Inn Cleveland	40	NA	13	1	38	-	-	92	72	6	14	-	92			
Cleveland NH	-	NA	17	-	-	-	-	17	9	4	4	-	17			
1970 Total	52	57	32	-	-	-	-	141	79	6	42	14	141			
Care-Inn Cleveland	52	50	16	-	-	-	-	118	69	2	33	14	118			
Cleveland NH	-	7	16	-	-	-	-	23	10	4	9	-	23			
1971** Total	6	73	32	-	-	-	-	111	64	5	40	2	111			
Care-Inn Cleveland	6	68	16	-	-	-	-	90	55	2	31	2	90			
Cleveland NH	-	5	16	-	-	-	-	21	9	3	9	-	21			

\*No employees were listed in the following categories or information not available: ADA diet, phy. ther., par, under full time work; laundry work under part-time work.

\*\*Rates not computed because of unavailability of 1971 population estimates.

TABLE IV-A-30 (cont.)  
SKILLED & INTERMEDIATE NURSING CARE, 1965-1971

ADMISSIONS														
Source of Fees										Place Admitted From				
Medi- Care		Medi- Caid	Pt. &/or Rel.	V.A.	Welfare	Welfare & Other		Other	Total	Hosp.	Another Nurs. Home	Own or Rel. Home	Other	Total
Washington County														
Skilled Nursing														
1965 Total		NA	32	-	-	10	5		47	16	7	24	-	47
Arnold Avenue NH		NA	6	-	-	6	5		17	4	5	8	-	17
Bessie J. Taylor NH		NA	26	-	-	4	-		30	12	2	16	-	30
1966 Total (None)														
1967 Arnold Avenue NH		-	8	2	-	16	-		26	8	6	12	-	26
1968 Arnold Avenue NH		-	5	-	-	16	-		21					
1969 Arnold Avenue NH		-	4	-	-	10	-		14	1	7	6	-	14
1970 Total		-	25	-	-	-	-		163	67	38	58	-	163
Arnold Avenue NH		-	12	-	-	-	-		15	3	5	7	-	15
Greenville Conv. H.		-	22	-	-	-	-		148	64	33	51	-	148
1971 Total		227	53	-	-	-	-		428	315	24	89	-	428
Arnold Avenue NH		-	2	-	-	-	-		13	5	4	4	-	13
Autumn Leaves NH		-	22	-	-	-	-		69	29	10	30	-	69
Greenville Conv. H.		-	13	-	-	-	-		103	54	10	39	-	103
Medi Center Greenville		227	16	-	-	-	-		243	227	-	16	-	243
Intermediate Nursing														
1965 Total (None)														
1966 Total		NA	43	-	-	7	-		50	21	6	21	2	50
Arnold Avenue NH		NA	24	-	-	6	-		30	14	4	12	-	30
Bessie J. Taylor NH		NA	19	-	-	1	-		20	7	2	9	2	20
1967 Bessie J. Taylor NH		-	17	-	-	3	-		20	10	1	8	1	20
1968 Bessie J. Taylor NH		-	17	1	-	3	-		21	5	-	15	1	21
1969 Bessie J. Taylor NH		-	13	-	-	-	-		13	7	-	4	2	13
1970 Bessie J. Taylor NH		-	19	-	-	-	1		20	10	-	10	-	20
1971 Bessie J. Taylor NH		-	13	-	-	-	-		13	1	1	11	-	13



Washington County fares somewhat better than Bolivar County in that not only more skilled-nursing-home beds are available per 10,000 population, but an intermediate nursing home also provides services. However, for reasons already stated in the preceding paragraph, the figures in Table IV-A-30 do not fully describe the situation.

Table IV-A-30 also provides additional information on nursing homes, including number and kinds of employees, age of patients served, total number of patient days, discharges, ambulation status, disposition of live discharges, total patients as the last day of the year, and source of fees. With regard to these statistics, a number of interesting things can be noted about nursing homes in these two counties, as expected, the majority of the patients are elderly and most are hospitalized for extended and indefinite periods of time (e.g., usually - averaging between 150-200 days of year - with a small proportion in ambulation status or discharged). Also interesting to note is that prior to 1969, the major source of payment was from patient or relatives. In 1969, the major sources of payment were Medicare and welfare. In 1970, when Medicaid was first in operation in Mississippi and similarly in 1971, it became, along with Medicare, one of the major sources of fee payment.

## IV-B

### WELFARE AND MEDICAID

This present section concerns public welfare and Medicaid (Title XIX). Public welfare and Medicaid are inextricably tied together in Mississippi since it is a basic requirement that Medicaid beneficiaries first be determined eligible to receive public assistance or welfare. Both public welfare and Medicaid are resources in Bolivar and Washington Counties which need further exploitation to alleviate the relatively high level of poverty among non-whites in both counties. The nature of this poverty has been described in Chapter II and is being subjected to further elaboration in Chapters IV and V. Essentially, it has been determined that in 1970 some 69 percent of the non-white families in Bolivar County and some 60 percent of the families in Washington County had family incomes below the poverty level. Moreover, other concomitants of (non-white) poverty such as poor housing, disorganized families, low level occupations, births to unwed mothers, high fertility, a dramatic change in the economic base of the counties (especially Bolivar) from agricultural to non-agriculture, and relatively high rates of morbidity and deaths in all ages but especially in young ages, lack of adequate facilities, and health manpower are and have been in evidence in both counties (particularly Bolivar). All these findings suggest that public welfare is an important resource needed to alleviate the conditions associated with poverty and improve the quality of life for the non-white population.

There are a number of barriers inherent in the welfare system in Mississippi and other areas. There are also many barriers blocking access to the fluid use of whatever resources are available. One barrier is the sheer logistics of getting the potential recipient to the welfare offices in Cleveland, Rosedale or Greenville. To obtain welfare it is required that the applicant present himself, unless totally disabled, at the welfare office. Getting to the welfare field offices requires in many situations the traversing of great distances through a network of unpaved roads without the benefit of a reliable means of private or public transportation. The second barrier is the application form which must be filled out to obtain welfare. The form is rather complex and requires a certain level of literacy to complete. The third barrier is the time period between application and actual determination of eligibility. The case worker must conduct an investigation before eligibility can be determined, and a determination of eligibility does not end the process. Depending on the welfare category, eligibility needs to be redetermined once or twice a year.

Obtaining Medicaid benefits requires transcending the barriers mentioned above. Moreover, complete access to the Medicaid system is further impeded by the complexity of the system. Each of the twelve services covered by Medicaid are subject to a number of intricate criteria and limitations.<sup>2</sup> These could be quite bewildering to the uninitiated. Examples include such limitations as 40 days of inpatient care in a hospital per fiscal year; no limitations on visits with physicians at the office or home, but a limit of 36 visits per fiscal year of physicians to recipients in nursing homes and one visit per confinement in the hospital. Additional limitations include those imposed on drugs (wholesale cost plus \$1.50 dispensing fee); dental care covering only emergency extractions (at \$7.00 per tooth); and hospitalization in tuberculosis and mental institutions available only to elderly after Medicare benefits have been spent, etc., etc. The point to be made is that the complexity of the system may in itself serve as a barrier to full utilization.

Our contention is that welfare and Medicaid data are more meaningful if they are initially used to derive resource indicators. Before welfare and Medicaid data constitute statistical reflections of levels of living, it is first necessary to close the gap separating actual number of persons receiving benefits and those who meet the eligibility requirements but are not on the welfare (or Medicaid) rolls. In other words, welfare rates cannot be considered a reflection of deteriorating or improving levels of living unless and until the coverage of the eligible population is complete.

If welfare and Medicaid are perceived as potential resources subject to greater utilization, then increases in utilization would indicate a functional rather than a dysfunctional situation. Moreover, greater utilization could be brought about by direct action of the Mound Bayou OEO health projects. That is, that programs designed by the health center to handhold potential eligible people through the application and eligibility determination processes could exert impact on the welfare loads, and increase utilization of Medicaid benefits. In analyzing the limited data we have obtained on welfare and Medicaid, we shall focus on the utilization of these services.

### Welfare Statistics

The total population of Washington County (70,578) was considerably greater than Bolivar County (49,400), according to the 1970 Census. The number of families below the poverty level, however, was more nearly equal

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2. Twelve services are: hospital inpatient services; hospital outpatient services; skilled nursing homes services; physician services; laboratory and X-ray services; eyeglasses necessitated by eye surgery; Christian Science sanitarium care; and periodic screening and diagnostic services.

in the two counties. Bolivar County had 4,559 and Washington County had 5,387 families below poverty level. Nevertheless, since Washington County showed 828 (or 18 percent) more families below the poverty level than Bolivar County, recipients of welfare might be expected to be greater in Washington County. This was not the case. Bolivar County reported 2,119 families with public assistance income while Washington County reported only 1,836. In Bolivar County, 46 percent of all families below the poverty level were receiving welfare while in Washington County the corresponding percentage was 34. Not only are more families receiving welfare in Bolivar County than in Washington County, but the average amount of assistance received is greater in Bolivar County (\$750.00) than in Washington County (\$677.00). When the census data are separated by race, the description of poverty becomes much sharper. In Bolivar County 68.9 percent and in Washington County 59.4 percent of all Negro families have incomes below the poverty level. Of the families below poverty level, 50.8 percent in Bolivar County and 36.7 percent in Washington County receive welfare payments.

The data presented below on welfare relate to three points in time -- before and after the 1970 Census -- September 1969, March 1970 and September 1970. These data were extracted directly from the county field offices' case files in Cleveland, Rosedale and Greenville. In addition, some data were obtained on a county basis for 1970 and 1971 from the State Department of Public Welfare. All these data are presented in Tables IV-B-1 through IV-B-7.

Tables IV-B-1 and IV-B-2 show the total amount of cash stipends, the number of cases, mean stipend per case, and approximate welfare coverage per 1,000 population by place within Bolivar County and Washington County, respectively. The statistics indicate that over the three time periods in both counties, the total disbursements, the number of cases, the average stipend and the extent of coverage has increased. Welfare disbursements have not only increased county wide in Bolivar County but also among the various places in the county which we have been able to identify in the Census. As seen in Table IV-B-1, the coverage in terms of cases per 1,000 population in September 1970 ranged from 83 cases per 1,000 population in Cleveland to 444.7 cases in Beulah per 1,000 population. This generally constitutes an improvement from September 1969. It is difficult to make this comparison in Washington County because there are only four places for which census denominator data are available. Each of the four places experienced an increase between September 1969 and September 1970.

On the county level (see Tables IV-B-3 and IV-B-4) the data for September 1969 indicate that Bolivar (\$188,142) and Washington (\$188,525) were almost equal on total disbursements. By September 1970, Bolivar County clearly moved ahead of Washington on total monthly disbursement (\$262,053 and \$221,742, respectively). This fact is also reflected in Table IV-B-4 which shows net expenditures for the 1971 fiscal year. Bolivar County disbursed nearly 100,000 more than Washington County in welfare assistance during the 1971 fiscal year.



TABLE IV-B-1  
MONTHLY TOTALS, CHECK ASSISTANCE FOR ALL CATEGORICAL PROGRAMS - PUBLIC WELFARE  
BOLIVAR COUNTY, MISSISSIPPI - SEPTEMBER 1969, MARCH 1970 and SEPTEMBER 1970

	Total - September 1969						Total - March 1970						Total - September 1970					
	Payments	No. of Cases	Average Payment	Percent	Number of Cases Per 10,000 Pop.		Payments	No. of Cases	Average Payment	Percent	Number of Cases Per 10,000 Pop.		Payments	No. of Cases	Average Payment	Percent	No. of Cases Per 10,000 Pop.	
Bolivar County, in Places	\$185,492	3,916	\$47	98.6	79.2		\$219,803	4,371	\$50	98.8	89.0		\$259,957	4,989	\$52	99.2	100.9	
Alligator	2,243	57	39	1.2	203.6		3,003	68	44	1.3	242.8		3,981	84	47	1.5	300.0	
Benoit	7,905	191	41	4.2	403.8		8,902	200	45	4.0	422.8		9,477	199	48	3.6	420.7	
Beulah	8,457	175	48	4.5	395.0		9,451	189	50	4.2	426.6		10,281	197	52	3.9	444.7	
Boyle	7,072	153	46	3.8	177.7		7,501	160	47	3.4	185.8		10,914	224	49	4.2	260.2	
Cleveland	35,471	740	48	18.8	55.5		45,904	900	51	20.7	67.5		57,448	1,106	52	21.8	83.0	
Duncan	11,234	238	47	6.0	397.3		13,802	266	52	6.2	444.1		15,622	291	54	6.0	485.8	
Gunnison	8,261	181	46	4.4	332.0		8,877	185	48	4.0	339.4		9,275	185	50	3.5	339.4	
Lamont	2,488	52	48	1.3	*		2,950	61	48	1.3	*		3,023	61	50	1.2	*	
Merigold	8,435	178	47	4.5	230.6		10,003	194	52	4.5	251.3		12,780	240	53	4.9	310.9	
Mound Bayou	17,216	354	49	9.2	165.9		20,367	397	51	9.2	186.0		24,647	453	54	9.4	212.3	
Pace	4,839	104	47	2.6	165.3		6,719	134	50	3.0	213.0		7,529	145	52	2.9	230.5	
Rosedale	20,977	434	48	11.1	167.0		22,943	463	50	10.3	178.1		24,546	474	52	9.4	182.4	
Scott	1,287	32	40	.7	*		1,324	33	40	.6	*		1,193	32	37	.5	*	
Shaw	25,109	508	49	13.3	202.1		26,918	517	52	12.2	205.7		34,591	634	55	13.2	144.8	
Shelby	19,551	416	47	10.4	157.3		25,434	490	52	11.4	135.2		28,243	540	52	10.8	204.2	
Skene	975	17	57	.5	*		1,140	20	57	.5	*		1,324	23	53	.5	*	
Stringtown	645	15	43	.3	*		980	22	45	.4	*		1,046	24	44	.4	*	
Winstorville	3,327	71	47	1.8	132.5		3,585	72	50	1.6	134.3		4,037	77	52	1.5	143.7	
Other Places in Mississippi	916	20	46	.5	---		1,999	46	43	.9	---		1,941	40	49	.7	---	
Outside Mississippi	1,734	39	44	.9	---		644	11	59	.3	---		155	5	31	.1	---	
Total Bolivar	188,142	3,975	47	100.0	---		222,446	4,428	50	100.0	---		262,053	5,034	52	100.0	---	

\* Indicates population counts for 1970 not available.

\* Indicates population counts for 1970 not available.

SOURCE: Clerically abstracted data, County Public Welfare Offices in Rosedale and Cleveland, Mississippi



TABLE IV-B-2

MONTHLY TOTALS, CHECK ASSISTANCE FOR ALL CATEGORICAL PROGRAMS - PUBLIC WELFARE  
WASHINGTON COUNTY, MISSISSIPPI - SEPTEMBER 1969, MARCH 1970 and SEPTEMBER 1970

	Total - September 1969					Total - March 1970					Total - September 1970				
	Payments	No. of Cases	Average Payment	Percent	No. of Cases Per 10,000 Pop.	Payments	No. of Cases	Average Payment	Percent	Number of Cases Per 10,000 Pop.	Payments	No. of Cases	Average Payment	Percent	No. of Cases Per 10,000 Pop.
Washington County, in Places	\$185,397	3,339	\$48	98.3	54.4	\$193,479	3,882	\$50	98.7	55.1	\$220,193	4,234	\$52	99.3	60.0
Arcola	4,371	92	48	2.3	56.0	4,509	88	51	2.3	170.2	5,199	93	56	2.3	180.0
Avon	830	18	46	.4	*	978	19	51	.5	*	1,095	21	52	.5	*
Bourbon	733	16	46	.4	*	752	15	50	.4	*	851	18	47	.4	*
Chatham	1,282	26	49	.7	*	1,506	29	52	.8	*	1,612	28	58	.7	*
Darlowe	953	17	56	.5	*	1,209	21	58	.6	*	1,269	21	60	.6	*
Elizabeth	1,484	32	46	.8	*	1,523	33	46	.8	*	1,788	38	47	.8	*
Glen Allan	3,822	86	44	2.0	*	3,804	80	48	1.9	*	3,993	79	51	1.8	*
Greenville	107,302	2,225	48	57.0	53.2	112,164	2,237	50	57.2	53.5	128,457	2,437	52	57.9	59.5
Hollandale	25,671	531	48	13.6	163.0	26,865	532	50	13.7	163.2	30,165	562	54	13.6	172.4
Leland	29,281	626	47	15.5	101.8	30,385	627	48	15.4	104.5	34,409	668	52	15.5	111.3
Metcalfe	4,541	95	48	2.4	*	4,534	96	48	2.4	*	5,496	102	54	2.5	*
Stoneville	613	12	51	.3	*	589	11	54	.3	*	752	15	50	.3	*
Tralake	763	20	33	.4	*	741	17	44	.4	*	839	18	47	.4	*
Tribbett	977	20	49	.5	*	884	19	47	.5	*	1,049	21	50	.5	*
Wayside	515	12	43	.3	*	558	11	51	.3	*	641	12	53	.3	*
Winterville	2,259	47	48	1.2	*	2,378	47	51	1.2	*	2,583	51	51	1.2	*
Other Places in Mississippi	1,711	37	46	.9	---	1,862	39	48	1.0	---	1,171	26	45	.5	---
Outside Mississippi	1,417	31	46	.8	---	511	10	51	.3	---	373	8	47	.2	---
Total Washington	188,525	3,907	48	100.0	---	195,852	3,931	50	100.0	---	221,742	4,268	52	100.0	---

\* Indicates population counts for 1970 not available.

SOURCE: Clerically abstracted data, County Public Welfare Office in Greenville, Mississippi

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TABLE IV-B-3

MONTHLY WELFARE ASSISTANCE,  
BOLIVAR AND WASHINGTON COUNTIES  
SEPTEMBER 1969, MARCH 1970, SEPTEMBER 1970

<u>County</u>	<u>September 1969</u>	<u>March 1970</u>	<u>September 1970</u>
Bolivar	\$ 188,142	\$ 222,446	\$ 262,053
Washington	188,525	195,852	221,742

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SOURCE: MISSISSIPPI STATE DEPARTMENT OF PUBLIC WELFARE

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TABLE IV-B-4

NET EXPENDITURES FOR PUBLIC ASSISTANCE PAYMENTS  
(GROSS PAYMENTS LESS CANCELLED CHECKS PLUS CASH REFUNDS)  
FISCAL YEAR 1971

Bolivar County	\$ 2,858,727
Washington County	2,764,544

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SOURCE: MISSISSIPPI STATE DEPARTMENT OF PUBLIC WELFARE

By examining data on Tables IV-B-5 and IV-B-6 on the categories of welfare for fiscal years 1970 and 1971, it can be seen that the major reason Bolivar exceeds Washington on total disbursements is because of the Aid to Dependent Children category, which is the second largest category in both counties after Old Age Assistance. Bolivar County had approximately 20,000 more cases of ADC than did Washington County in 1971. It is also notable that ADC disbursements are increasing more rapidly than Old Age Assistance disbursements in both counties.

The same kind of configuration is evident in Table IV-B-7 which concerns participation in the food stamps program. In each year for which data are shown (1968-1971), Bolivar County exceeded by a wide margin Washington County on both the number of total participants and the cash bonus value of the food stamps.

We stated earlier that one objective of the present project was to eventually monitor the success (or lack of success) of the Mound Bayou OEO projects in promoting the utilization of existing resources by indigent populations. The question that can be posed is: Do the data presented so far offer any evidence that welfare resources are being more utilized in Bolivar County than in neighboring Washington County, perhaps due to Mound Bayou health center activity?

Of course, a thorough response to this question would require the "before-and-after" kind of study described in our methodology section. We believe that the statistics clearly show that Bolivar County resources are being disbursed more generously, however insufficient that is, than Washington County. There is also some indication that welfare disbursements are reaching into the more remote areas of Bolivar County than is the situation in Washington County. A more complete analysis of data might indicate that factors other than the Mound Bayou health center are affecting these results. However, two important statistics tend to show that the health center has had impact. First, as we have already indicated, there are in absolute terms more indigent families in more populous Washington County; therefore, it would be expected that, everything else being equal, Washington County would provide greater total welfare disbursements. Secondly, since the ADC program is the category that tilts the balance toward Bolivar, the discrepancy of aid between the two counties might be explained by the age structure. However, the proportions of children under 18 in Bolivar and Washington Counties in 1970 were very similar (approximately 43 percent). The age structure, rather than weakening the hypothesis that welfare disbursements are greater in Bolivar County than in Washington County, clearly strengthens that hypothesis.

TABLE IV-B-5

Welfare Assistance by Categorical Program  
 Washington and Bolivar Counties  
 Fiscal Years 1970 and 1971

	1970	1971	Increase 1970-1971	% Increase 1970-1971
Bolivar County				
Old Age Assistance	111,767	124,429	12,662	+ 11
Aid to the Blind	2,799	3,542	743	+ 26
Aid to Dependent Children	73,821	97,716	23,895	+ 32
Aid to Partial or Total Disabled	31,486	39,285	7,799	+ 25
TOTAL	219,873	264,972	45,099	+ 20
Washington County				
Old Age Assistance	123,278	136,375	13,097	+ 11
Aid to the Blind	3,649	4,194	545	+ 15
Aid to Dependent Children	56,493	75,168	18,675	+ 33
Aid to Partial or Total Disabled	35,459	43,516	8,057	+ 23
TOTAL	218,879	259,253	40,374	+ 18

SOURCE: Mississippi State Department of Public Welfare

TABLE IV-B-6

Percent of Total Welfare Assistance  
to Each Categorical Program  
Bolivar and Washington Counties  
Fiscal Years 1970 and 1971

	1970 Percent	1971 Percent
Bolivar County		
Old Age Assistance	50.8	47.0
Aid to the Blind	1.3	1.3
Aid to Dependent Children	33.6	36.9
Aid to Partial or Total Disabled	14.3	14.8
TOTAL	100.0	100.0
Washington County		
Old Age Assistance	56.3	52.6
Aid to the Blind	1.7	1.6
Aid to Dependent Children	25.8	29.0
Aid to Partial or Total Disabled	16.2	16.8
TOTAL	100.0	100.0

SOURCE: Mississippi State Department of Public Welfare



TABLE IV-B-7

FOOD STAMP PROGRAM PARTICIPANTS DURING THE  
MONTHS OF JUNE 1968-1971 FOR BOLIVAR AND  
WASHINGTON COUNTIES

	1968	1969	1970	1971
Bolivar county				
Participants, total	14,436	14,051	19,238	19,293
On public assistance	2,208	2,852	3,555	4,196
Min. purchase level participants, total	1,718	1,547	2,021	1,703
On public assistance	40	56	123	255
Value of bonus coupons	NA	NA	\$322,055	\$336,541
Washington county				
Participants, total	9,274	6,657	10,909	12,157
On public assistance	2,026	2,194	2,836	3,775
Min. purchase level participants, total	1,214	443	634	562
On public assistance	192	128	98	238
Value of bonus coupons	NA	NA	\$186,689	\$201,805

SOURCE: MISSISSIPPI STATE DEPARTMENT OF PUBLIC WELFARE

## Medicaid

As we have already indicated, Medicaid in Mississippi is a category of welfare. Tables IV-B-10 to IV-B-12 show two kinds of data -- one concerning Medicaid beneficiaries and the other concerning Medicaid providers or vendors. Although data on recipients and vendors are presented for 1971 and 1972, it should be indicated that 1971 was a startup year, and included only part of the fiscal year (approximately 9 months). The 1972 data are for the full fiscal year.

As can be seen from Tables IV-B-8 and IV-B-9, although slightly more money was disbursed in Washington County during the two years in question, Bolivar County had a significantly larger number of persons receiving Medicaid benefits. Since Washington County contains in absolute terms more indigent persons than Bolivar County, these statistics would indicate a more effective utilization by Bolivar County.

Tables IV-B-10 and IV-B-11 examine Medicaid providers. It can be seen that Washington County vendors receive greater payments in all of the services (for both years) except dental care and drug providers. Table IV-B-12 shows data on the utilization of the services provided by Medicaid vendors to beneficiaries. These data are shown by sex and race. In both counties non-whites exceed whites in terms of total services, medical visits, total days in hospitals, and number of outpatient visits. The whites, however, exceed non-whites in the skilled nursing home discharges. In most categories of services, it is interesting to note that Medicaid payments made to whites exceed those made to non-whites. The exceptions are payments per hospital days and payments per outpatient visits where the average payments between races are similar. The statistics in Table IV-B-12 also indicate that although Washington has fewer recipients than Bolivar County, the tendency is for recipients in Washington County to receive larger payments.

The Medicaid program in Mississippi has only been in existence since 1971. Therefore, there are insufficient trend data to draw any conclusions about utilization patterns between Bolivar and Washington County. It does appear, however, that considering the extent of poverty in these two counties that Medicaid resource utilization will increase as the program starts to take hold. In Stage III of the present project much attention will be focused on whether and to what extent this increase takes place, and is commensurate with the obvious needs in both counties.

TABLE IV-B-8

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TOTAL MEDICAID DISBURSEMENTS  
BOLIVAR AND WASHINGTON COUNTIES, FY 1971 and 1972

<u>County</u>	<u>1971</u>	<u>1972</u>
Bolivar	604,661	1,158,575
Washington	714,788	1,244,865

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SOURCE: MISSISSIPPI STATE MEDICAID COMMISSION

TABLE IV-B-9

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NUMBER OF PERSONS RECEIVING MEDICAID SERVICES  
BOLIVAR AND WASHINGTON COUNTIES, FY 1971 and 1972

<u>County</u>	<u>1971</u>	<u>1972</u>
Bolivar	4,735	8,056
Washington	4,225	6,615

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SOURCE: MISSISSIPPI STATE MEDICAID COMMISSION

TABLE IV-B-10

PAYMENTS FOR SERVICES PROVIDED TO MEDICAID ELIGIBLES IN  
BOLIVAR AND WASHINGTON COUNTIES

1971

Place	Hospitals	Skilled Nursing Homes	Dentists	Ambulance Service	Physicians and Laboratories	Drug Providers	Total
Bolivar County	192,756	191,985	8,457	330	187,038	225,695	806,261
Cleveland	122,098	191,985	5,954		103,056	70,789	493,882
Mound Bayou	37,134		2,503	330	1,273	9,001	49,911
Rondale					35,426	25,942	61,698
Scott						9,111	9,111
Shaw					26,380	25,860	52,240
Shelby	33,524				20,903	84,992	139,419
Washington County	215,577	320,599	5,992		200,350	168,507	911,025
Greenville	137,769	320,599	4,857		102,518	103,167	668,910
Hollandale	77,808		1,135		87,212	38,149	204,304
Ieland					10,620	27,191	37,811

SOURCE: Mississippi Medicaid Commission Annual Report

TABLE IV-B-11

PAYMENTS FOR SERVICES PROVIDED TO MEDICAID ELIGIBLES IN  
BOLIVAR AND WASHINGTON COUNTIES

1972

Place	Hospitals	Skilled Nursing Homes	Dental Care	Emergency Ambulance Service	Physicians	Drug Providers	Durable Medical Supplies	Eye- Glasses	Total
Bolivar County	\$320,245	\$274,840	\$15,656		\$288,152	\$671,026	\$1,018	\$ 863	\$1,571,800
Cleveland	229,876	274,840	5,357		172,201	140,638	1,018	863	844,793
Mound Bayou	90,369		2,664		35,380	19,459			147,872
Rosedale			2,337		5,611	5,923			13,871
Scott			1,291		11,206	12,692			25,189
Shaw			4,007		43,754	47,629			95,390
Shelby						156,533			156,533
Washington County	390,351	508,517	15,154		313,701	261,435		1,920	1,491,078
Greenville	276,342	508,517	12,825		160,196	169,802		1,905	1,129,587
Hollandale	99,194		2,329		132,983	57,474		15	291,995
Leland	14,815				20,522	34,159			69,496

SOURCE: Mississippi Medicaid Commission Annual Report



TABLE IV-B-12

SELECTED MEDICAID STATISTICS  
BY RACE AND SEX FOR BOLIVAR AND WASHINGTON COUNTIES  
FISCAL YEAR 1972

	Bolivar County				Washington County			
	Non-white		White		Non-white		White	
	Male	Female	Male	Female	Male	Female	Male	Female
Total Recipients	2,925	4,538	221	372	2,200	3,723	263	428
Payment Per Recipient	\$ 102	\$ 121	\$ 445	\$ 571	\$ 110	\$ 136	\$ 633	\$ 768
No. of Medical Visits	9,196	16,505	690	1,343	4,489	9,310	422	722
Payment Per Visit	\$ 7	\$ 6	\$ 7	\$ 66	\$ 6	\$ 6	\$ 9	\$ 7
No. of Hospital Discharges	248	550	52	66	210	414	49	49
Total Days in Hospital	1,882	3,340	405	434	1,639	2,592	478	378
Payment Per Hospital Discharge	\$ 411	\$ 320	\$ 401	\$ 347	\$ 439	\$ 357	\$ 600	\$ 456
Payment Per Hospital Day	\$ 54	\$ 53	\$ 51	\$ 53	\$ 56	\$ 57	\$ 61	\$ 59
No. of Outpatient Visits	531	768	43	93	385	507	81	54
Payment Per Visit	\$ 10	\$ 9	\$ 9	\$ 10	\$ 11	\$ 12	\$ 12	\$ 14
No. of Skilled Nursing Home Discharges	3	18	11	17	14	23	25	33
Payment Per Discharge	\$7,375	\$2,188	\$4,532	\$7,862	\$2,516	\$4,433	\$4,045	\$7,445

SOURCE: Mississippi State Medicaid Commission

TABLE IV-B-13

MEDICAL PAYMENTS BY CATEGORY OF WELFARE RECIPIENTS, BY RACE AND BY SEX,  
BOLIVAR AND WASHINGTON COUNTY 1971-1972

Welfare Category	1971	1972	Increase 1971-1972	% Increase 1971-1972
Old Age Assistance				
Bolivar County	\$274,065	\$375,570	\$101,505	+ 37
Washington County	412,039	662,470	250,431	+ 61
Aid to the Blind				
Bolivar County	6,124	17,239	11,115	+182
Washington County	13,104	9,971	-3,133	- 24
Aid to Dependent Children				
Bolivar County	195,171	517,613	322,442	+165
Washington County	100,920	311,661	210,741	+209
Aid to Partial & Total Disabled				
Bolivar County	129,251	248,153	118,902	+ 92
Washington County	188,725	260,763	72,038	+ 38
Total				
Bolivar County	604,611	1,158,575	553,964	+ 92
Washington County	714,788	1,244,865	530,077	+ 74
Race and Sex Groups				
Bolivar County	604,569	1,158,428	553,859	+ 92
Black				
male	154,268	296,948	142,680	+ 92
female	234,362	550,718	316,356	+135
White				
male	61,891	98,384	36,493	+ 59
female	154,048	212,378	58,330	+ 38
Washington County	713,183	1,242,798	529,615	+ 74
Black				
male	142,273	242,369	100,096	+ 70
female	271,551	505,278	233,727	+ 86
White				
male	105,760	166,362	60,602	+ 57
female	193,599	328,789	135,190	+ 70

SOURCE: Mississippi State Department of Public Welfare.

## IV-C

### EDUCATION

#### General

The purpose of this section is to examine and analyze some of the aspects which characterize education in both Bolivar and Washington Counties. As level of educational attainment is one of the primary determinants of socio-economic status, an analysis of the educational systems in both the target and comparison areas plays a prominent role in this study. Our major objective in examining the education data for the areas is not one of defining levels of education, but rather an effort to evaluate the school systems' capacity for delivering educational services to the community.

In Bolivar and Washington Counties, we will explore the quality and effectiveness of the educational systems at the public, private and parochial, technical and vocational, and the college levels. The data sets presented and examined here deal with such subjects as the racial composition of the schools, the resources expended in the school systems, the ratio of pupils and teachers, the rate of dropouts, and the transiency and mobility of the student bodies.

#### Public Schools

The effectiveness, quality and availability of education in the public schools in Bolivar and Washington Counties will be discussed in terms of enrollment, average daily attendance, current expenditures per pupil, instructional expenditures per pupil, racial composition, dropout rates, and in and out migration. Most of the public school data presented here has been aggregated at the district level, and much of the data was obtained from a ten-year trend study on local school districts which was published by the Mississippi State Department of Education.

Bolivar County, the target area, has six school districts, designated by the numerics one through six with schools located in the communities of Rosedale, Benoit, Shelby, Cleveland, Shaw and Mound Bayou. Washington County has four school districts located at Hollandale, Leland, Western Line and Greenville (see Figure IV-C-1).

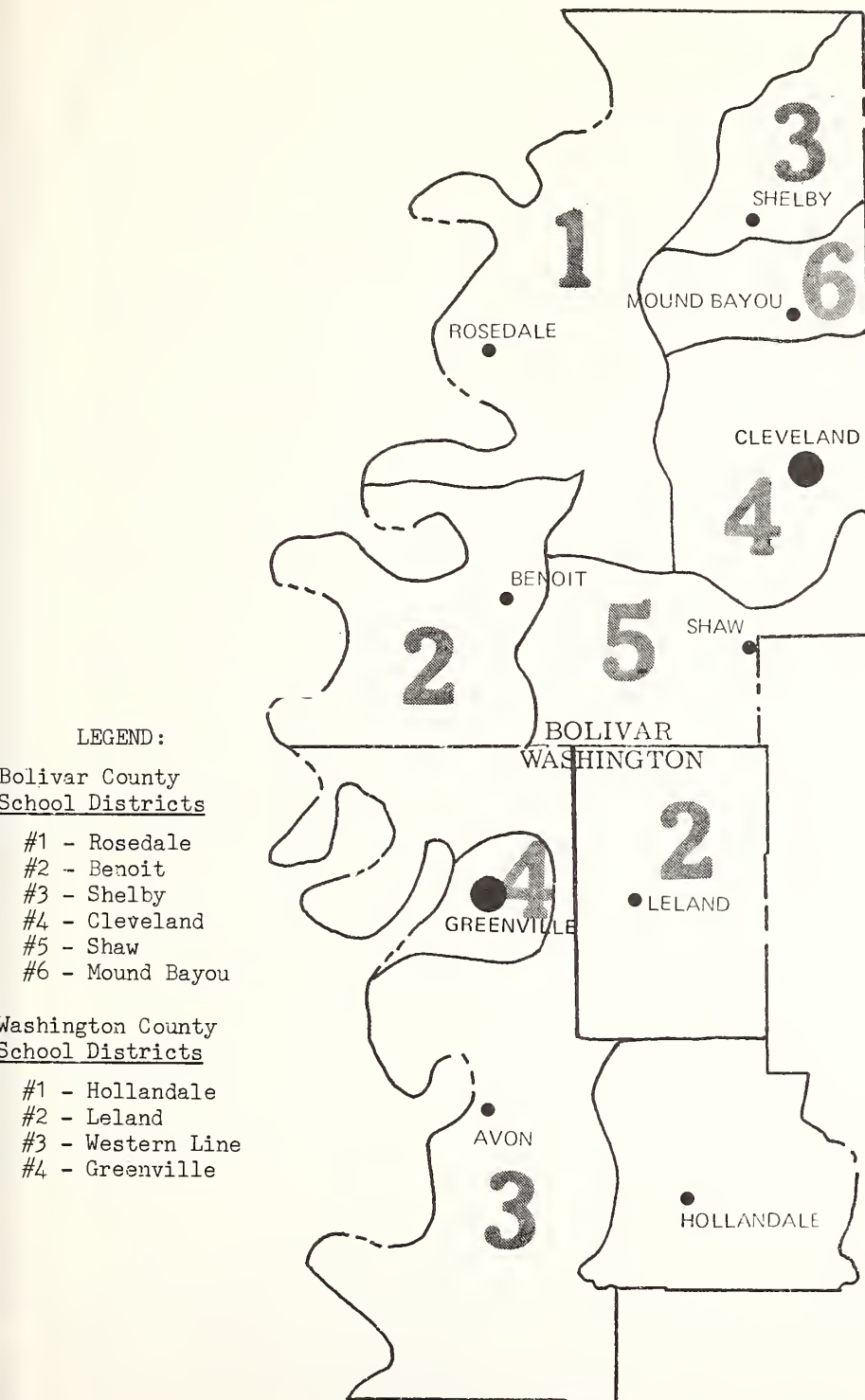
#### Enrollment

The enrollment data, as shown in Table IV-C-1, reflect the enrollment for kindergarten through the twelfth grade for each district for the years 1965 to 1970 inclusive. For Bolivar County, the figures indicate a 10

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1. Ten-year Trend Study on Local School Districts - 1960 through 1970, Mississippi State Department of Education, Division of Administration and Finance, Jackson, Mississippi.

FIGURE IV-C-1

SCHOOL DISTRICTS  
BOLIVAR AND WASHINGTON COUNTIES



SOURCE: Mississippi State Department of Education

TABLE IV-C-1

## ENROLLMENT

## BOLIVAR AND WASHINGTON COUNTIES

Place	1965	1966	1967	1968	1969	1970	% Change From 1965-1970
<u>Bolivar County</u>	15,562	15,736	14,955	15,280	14,952	14,001	-10%
Rosedale	2,989	2,909	2,932	2,778	2,646	2,635	-12%
Benoit	1,579	1,511	1,527	1,513	1,493	1,321	-16%
Shelby	2,397	2,512	2,354	2,163	2,094	1,929	-20%
Cleveland	5,154	5,188	5,156	5,115	5,058	4,765	-8%
Shaw	2,106	1,982	1,331	2,025	2,029	1,752	-17%
Mound Bayou	1,337	1,634	1,655	1,686	1,632	1,599	+20%
<u>Washington County</u>	21,132	21,269	21,178	20,933	21,187	20,773	-2%
Hollandale	2,828	2,695	2,643	2,529	2,579	2,298	-19%
Leland	3,790	3,709	3,719	3,716	3,651	3,432	-9%
Western Line	2,439	2,704	2,677	2,603	2,612	2,612	+7%
Greenville	12,075	12,161	12,139	12,085	12,345	12,431	+3%



percent decrease in enrollment for the six year period. District 1 (Rosedale), District 2 (Benoit) and District 5 (Shaw) had 12 to 16 percent decreases. District 3 (Shelby) showed the largest decrease at 20 percent. District 4 (Cleveland) had the smallest decrease at 7 percent. Mound Bayou (District 6), where enrollment had a substantial increase of 20 percent over the six year period, was the only district in Bolivar County to have an increase in enrollment. The increase in school enrollment in Mound Bayou may be related to the establishment of the health center and hospitals; e.g., the school system in Mound Bayou is likely to service the children of staff members employed at the OEO facilities.

For Washington County, the total enrollment for the six year period decreased 2 percent. Hollandale lost 19 percent of the 1965 enrollment, and Leland's enrollment decreased by 9 percent. Western Line gained 7 percent and Greenville 3 percent.

The enrollment data for Bolivar and Washington Counties, though not inconsistent with school age population data and private and parochial school enrollment, is not a true indicator of school attendance for the counties due to the lack of a mandatory school attendance law in the State of Mississippi during the six year trend period.

#### Average Daily Attendance (ADA)

Average Daily Attendance for the districts in Bolivar and Washington Counties showed no appreciable change between 1965 and 1970, as shown in Tables IV-C-2 and IV-C-3. The percent of average daily attendance in terms of enrollment increased by 2 percent in Bolivar County and decreased by 1 percent in Washington County. All six districts in Bolivar County increased their percent of average daily attendance with Shelby, Shaw and Mound Bayou districts reporting the greatest improvements with increases of 6 percent, 7 percent and 8 percent, respectively. In Washington County the percent of ADA increased in the Hollandale district by 2 percent and in the Leland district by 1 percent. Western Line district dropped 2 percent and Greenville 1 percent.

#### Pupil-Teacher Ratio (PTR)

The ratio of pupils per teacher in all districts in Bolivar and Washington Counties showed a significant downward trend over the six-year period from 1965 to 1970. (See Table IV-C-4.) As a low pupil-teacher ratio is generally considered a positive indicator of the quality of education, this decline in the average classroom size in both Bolivar and Washington Counties is an important factor in evaluating the effectiveness of the education in the school system.

The average pupil-teacher ratio for all districts in Bolivar County declined from 31.2 students per teacher in 1965 to 24.3 in 1970. The largest decrease in the Bolivar County districts was in the Shelby district where the pupil-teacher ratio dropped from 33.7 in 1965 to 21.4 in 1970. Mound Bayou district had the least improvement with 29.7 pupils per teacher in 1965 and 28.6 in 1970. Mound Bayou also reported particularly high

TABLE IV-C-2

## PERCENT OF AVERAGE DAILY ATTENDANCE IN TERMS OF ENROLLMENT

Place	1965	1966	1967	1968	1969	1970
<b>Bolivar</b>	90	89	93	91	92	92
Rosedale	89	91	88	90	92	90
Benoit	90	92	91	90	92	94
Shelby	88	84	89	91	93	94
Cleveland	91	90	91	92	92	92
Shaw	82	87	*	90	89	90
Mound Bayou	*	81	85	89	89	88
<b>Washington</b>	91	91	92	92	93	90
Hollandale	87	90	92	94	93	89
Leland	88	91	91	92	91	89
Western Line	88	86	86	88	91	86
Greenville	93	93	94	93	94	92

\*Data not available

Source: Ten year trend study on local school districts, Mississippi State Department of Education

TABLE IV-C-3

TOTAL AVERAGE DAILY ATTENDANCE  
FOR BOLIVAR AND WASHINGTON COUNTIES

Place	1965	1966	1967	1968	1969	1970
<u>Bolivar County</u>	14,074.6	13,957.6	13,944.9	13,849.3	13,684.3	12,813.7
Rosedale	2,670.3	2,660.4	2,583.4	2,496.2	2,443.7	2,382.9
Benoit	1,419.9	1,387.6	1,385.5	1,367.8	1,369.1	1,238.4
Shelby	2,113.8	2,188.8	2,105.2	1,974.6	1,943.1	1,815.0
Cleveland	4,702.5	4,681.1	4,693.4	4,716.3	4,673.0	4,389.6
Shaw	1,723.8	1,719.6	1,778.8	1,803.1	1,811.2	1,580.6
Mound Bayou	1,444.3	1,320.1	1,398.6	1,491.3	1,444.2	1,407.2
<u>Washington County</u>	19,213.2	19,449.0	19,494.6	19,352.2	19,625.6	18,730.6
Hollandale	2,445.4	2,412.2	2,429.3	2,370.4	2,398.8	2,049.6
Leland	3,344.5	3,364.3	3,371.5	3,401.8	3,320.9	3,042.6
Western Line	2,140.8	2,334.9	2,290.7	2,294.6	2,362.9	2,247.1
Greenville	11,282.5	11,337.6	11,403.1	11,285.4	11,543.0	11,391.3

SOURCE: Ten-year Trend Study on Local School Districts

TABLE IV-C-4

Pupil Teacher Ratio for  
Bolivar and Washington Counties  
1965-1970

	1965	1966	1967	1968	1969	1970
Bolivar County						
Average	31.2	32.1	28.6	29.0	26.6	24.3
Rosedale	32.1	29.0	27.4	28.3	27.3	25.3
Benoit	29.2	30.2	28.8	27.5	24.8	22.0
Shelby	33.7	35.4	28.4	26.7	23.8	21.4
Cleveland	30.3	29.5	28.6	28.1	27.2	25.6
Shaw	31.9	31.5	19.0	27.7	24.4	23.1
Mound Bayou	29.7	37.1	39.4	35.9	32.0	28.6
Washington County						
Average	29.7	29.1	29.0	27.4	26.8	24.6
Hollandale	31.4	28.1	29.1	27.2	28.3	22.5
Leland	31.8	30.9	31.3	30.7	29.4	26.6
Western Line	29.0	30.4	29.4	26.3	24.2	24.9
Greenville	26.5	26.8	26.2	25.3	25.2	24.5

SOURCE: Ten year trend study on local school district, Mississippi  
State Department of Education

ratios in 1966, 1967 and 1968 with 37.1, 39.4 and 35.9. These ratios were higher than any other district in both the target and comparison areas for all six years. This may be related to the opening and subsequent expansion of the OEO facilities that tended to stress the Mound Bayou school system.

In Washington County, the average pupil-teacher ratio for all districts decreased from 29.7 in 1965 to 24.6 in 1970. The greatest decline was in the Hollandale district, 31.4 in 1965 and 22.5 in 1970. The Greenville district reported the smallest drop, 26.5 in 1965 and 24.5 in 1970.

As would be expected, the improvement in the pupil-teacher ratio in both counties was due primarily to an increased number of full time teachers in each district. (See Table IV-C-5). The number of teachers in Bolivar County increased from 499 in 1965 to 572 in 1970, a 15 percent increase. The number of Washington County teachers rose from 749 in 1965 to 843 in 1970, an increase of 13 percent.

### Expenditures

In general, expenditures per pupil were greater in Bolivar County than in Washington County during the period from 1965 to 1970. The average instructional expense per pupil, as shown in Table IV-C-6, was generally higher in Washington County than in Bolivar County during the trend period. Average instructional expense in Bolivar County increased from \$156.22 per pupil in 1965 to \$354.63 per pupil in 1970, an increase of 127 percent. Instructional expense in Washington County rose from \$123.19 per pupil in 1965 to \$228.14 per pupil in 1970, an 85 percent increase. The rise in instructional expense was particularly notable in the rural districts of both counties. In Bolivar County, the instructional expense per pupil in the Benoit, Shelby and Mound Bayou districts rose 147 percent, 146 percent and 146 percent respectively, as compared to a 92 percent rise in the more urban Cleveland district. In Washington County, the rural consolidated districts of Hollandale and Western Line showed increases of 111 percent and 100 percent, respectively. Greenville's instructional expense per pupil rose 60 percent and Leland 77 percent.

The primary factor contributing to the rise in instructional expense per pupil was the increase of teachers' salaries in both counties. As shown in Table IV-C-7, the average salary for teachers in Bolivar County increased from \$3,844 in 1965 to \$5,516 in 1970. Mound Bayou district had the lowest teachers' salaries for the six year period with \$3,660 in 1965 and \$5,334 in 1970. Cleveland district teachers' salaries were the highest in Bolivar County with teachers earning \$4,114 in 1965 and \$5,820 in 1970. The average salary for teachers in Washington County was \$4,143 in 1965 and \$5,879 in 1970. Greenville district paid the highest salaries during the trend period and Hollandale the lowest.

Current expenditures per pupil were higher in Bolivar County than in Washington County for all years except 1965 and 1966. (See Table IV-C-8). On the average, current expenditures per pupil in Bolivar County rose from \$226.07 in 1965 to \$516.66 in 1970, an increase of 129 percent. Washington County averaged \$250.90 per pupil in 1965 and \$479.11 per pupil in 1970,



TABLE IV-C-5

Number of Teachers per District for  
Bolivar and Washington Counties  
1965-1970

	1965	1966	1967	1968	1969	1970
<b>Bolivar County</b>						
Average	499	504	535	536	565	572
Rosedale	83	84	89	89	94	95
Benoit	93	100	107	98	97	104
Shelby	54	50	53	55	60	60
Cleveland	71	71	83	81	88	90
Shaw	170	176	180	182	186	186
Mound Bayou	66	63	70	73	83	76
	45	44	42	47	51	56
<b>Washington County</b>						
Average	749	758	765	790	812	843
Hollandale	124	126	127	131	135	140
Ieland	90	96	91	93	91	102
Western Line	119	120	119	121	124	129
Greenville	84	89	91	99	108	105
	456	453	464	477	489	507

SOURCE: Ten year trend study of local school district, Mississippi  
State Department of Education

## INSTRUCTIONAL EXPENSE PER PUPIL

Place	1965	1966	1967	1968	1969	1970	% Change From 1965-1970
<u>Bolivar County Average</u>	\$156.22	\$186.67	\$225.31	\$248.06	\$336.22	\$354.63	127%
Rosedale	153.83	187.33	223.92	232.75	313.73	341.15	121
Benoit	160.30	166.91	221.26	252.28	388.26	395.67	147
Shelby	155.25	178.98	237.34	281.08	352.49	381.88	146
Cleveland	175.17	204.80	224.19	233.14	306.57	335.57	92
Shaw	169.40	198.59	251.61	308.78	394.47	370.32	119
Mound Bayou	123.30	183.42	193.54	180.33	261.82	303.20	146
<u>Washington County Average</u>	184.78	226.98	226.00	250.37	309.78	342.22	85
Hollandale	163.47	173.74	192.10	200.36	259.02	345.42	111
Leland	170.37	298.07	205.50	216.34	262.49	301.36	77
Western Line	182.54	197.24	240.71	279.96	362.12	365.84	100
Greenville	222.74	238.85	265.70	304.83	355.49	356.25	60

SOURCE: Ten-year Trend Study on Local School Districts, MISSISSIPPI STATE DEPARTMENT OF EDUCATION

TABLE IV-C-7  
AVERAGE TEACHERS' SALARIES  
FOR BOLIVAR AND WASHINGTON COUNTIES, 1965 - 1970

Place	1965	1966	1967	1968	1969	1970 .
<u>Bolivar County</u>						
Average	\$3,844	\$3,847	\$4,325	\$4,359	\$5,350	\$5,516
Rosedale	3,697	3,676	4,051	4,205	5,214	5,432
Benoit	3,766	3,757	4,445	4,362	5,327	5,390
Shelby	3,875	3,894	4,374	4,345	5,355	5,399
Cleveland	4,114	4,075	4,382	4,555	5,581	5,820
Shaw	3,955	3,951	4,472	4,456	5,453	5,724
Mound Bayou	3,660	3,734	4,229	4,234	5,175	5,334
<u>Washington County</u>						
Average	\$4,143	\$4,175	\$4,644	\$4,778	\$5,895	\$5,879
Hollandale	3,937	3,959	4,455	4,431	5,765	5,688
Leland	4,156	4,149	4,753	4,874	5,904	5,904
Western Line	4,079	4,071	4,524	4,799	5,811	5,821
Greenville	4,400	4,524	4,845	5,011	6,102	6,103

SOURCE: Ten-year Trend Study on Local School Districts, MISSISSIPPI STATE DEPARTMENT OF EDUCATION

TABLE IV-C-8

## CURRENT EXPENDITURES PER PUPIL

Place	1965	1966	1967	1968	1969	1970	% Change From 1965-1970
<u>Bolivar County Average</u>	\$226.07	\$264.59	\$323.11	\$360.35	\$483.19	\$516.66	129%
Rosedale	223.63	257.86	340.80	360.54	484.63	510.08	128
Benoit	223.64	232.54	315.58	361.89	549.69	590.29	164
Shelby	229.09	279.99	334.02	404.52	504.29	575.62	151
Cleveland	251.00	282.17	322.01	327.50	418.02	463.55	85
Shaw	231.94	267.39	338.33	402.16	532.59	484.96	109
Mound Bayou	197.11	267.58	287.86	305.48	409.87	475.46	141
<u>Washington County Average</u>	\$250.90	\$272.14	\$307.19	\$337.80	\$424.98	\$479.11	91
Hollandale	224.98	237.68	254.54	269.22	349.08	477.41	112
Ieland	231.63	265.57	283.69	294.15	365.41	432.49	87
Western Line	276.27	289.72	358.07	402.59	524.15	540.76	96
Greenville	270.74	295.59	332.47	385.26	457.75	465.78	72

SOURCE: Ten-year Trend Study on Local School Districts, Mississippi State Department of Education

a 91 percent increase. In the current expenditures category, the rural districts again showed the greatest increases with the Bolivar County districts of Benoit, Shelby and Mound Bayou reporting increases of 164 percent, 151 percent and 141 percent, respectively, and the Cleveland district increasing at a lower rate of 85 percent. In Washington County, the differences in the rates of increase were not as prominent between the rural consolidated districts and the urbanized districts. Hollandale reported an increase of 112 percent and Western Line 96 percent as compared to 87 percent for Leland and 72 percent in Greenville.

In both Bolivar and Washington Counties the largest increases in expenditures occurred between 1968 and 1969 with Bolivar County reporting a 36 percent increase in the instructional expense category and a 34 percent increase in total current expenditures. Washington County reported an increase of 24 percent in instructional expense and a 26 percent increase in total current expenditures for the same time period.

### Racial Composition

The data sets on racial composition for the school districts in Bolivar and Washington Counties include data for 1968, 1970 and 1972 and were obtained from the Directory of Public Schools for 1968, 1970 and 1972, published by the Department of Health, Education and Welfare. As shown in Table IV-C-9, all districts in Bolivar and Washington Counties had predominantly black enrollments for all three years.

In Bolivar County, the Mound Bayou district had the largest percentage of black enrollment with 99.9 percent black students in 1968 and 100 percent black in 1970 and 1972. Cleveland district reported the smallest black enrollment with 55.7 percent black students in 1968 and 63 percent in 1970 and 1972. All districts in Bolivar County increased the percentage of minority and black enrollment for all three years except District 2 (Benoit) where the percentage of blacks enrolled, fluctuated from 81.2 percent in 1968 to 100 percent in 1970 and dropped to 95 percent in 1972. The percentage of black enrollment in Rosedale district increased from 78.8 percent in 1968 to 85 percent in 1970. Shelby district reported 80.6 percent black enrollment in 1968 and 97 percent in 1972; and Shaw district had 75.2 percent black students in 1968 as compared to 83 percent in 1972.

In Washington County, Hollandale district reported the highest percentage of black students with 99 percent in 1970 and 1972. Greenville district had the lowest black enrollment in 1968 and 1970 with 54 percent black students in 1968 and 61.1 percent black students in 1970. By 1972, black enrollment in the Greenville district had increased to 72 percent. Western Line had a steady increase in black students with 74.8 percent in 1968, 77.8 percent in 1970 and 80 percent in 1972. Leland district was the only district in both counties to report a decrease in black enrollment, reporting 83.4 percent black students in 1970 and 67 percent black students in 1972.



TABLE IV-C-9

RACIAL COMPOSITION OF STUDENTS  
IN BOLIVAR AND WASHINGTON COUNTIES  
1968 - 1970 - 1972

	1968			1970			1972		
	% Black	% Minority	% White	% Black	% Minority	% White	% Black	% Minority	% White
<u>Bolivar County</u>									
Rosedale	78.8	80.4	19.6	85.2	86.4	13.6	85.0	86.0	14.0
Benoit	81.2	81.2	18.8	100.0	100.0	0.0	95.0	95.0	5.0
Shelby	80.6	82.9	17.1	93.2	95.1	4.9	97.0	99.0	1.0
Cleveland	55.7	56.8	43.2	61.9	63.0	37.0	63.0	64.0	36.0
Shaw	75.2	75.6	24.4	82.6	83.0	17.0	83.0	83.0	17.0
Mound Bayou	99.9	99.9	0.1	100.0	100.0	0.0	100.0	100.0	0.0
<u>Washington County</u>									
Hollandale	N/A	N/A	N/A	99.0	99.0	1.0	99.0	99.0	1.0
Leland	N/A	N/A	N/A	83.4	83.4	16.6	67.0	68.0	32.0
Western Line	74.8	75.3	24.7	77.8	78.1	21.9	80.0	80.0	20.0
Greenville	54.0	54.6	45.4	61.1	61.4	38.6	72.0	72.0	28.0

SOURCE: Ten-year Trend Study on Local School Districts, Mississippi State Department of Education

N/A: Information not available

## Dropouts

The data sets for dropouts in Bolivar and Washington Counties include dropout rates for 1970 and 1971, as shown in Table IV-C-10, and dropouts by reason, as shown in Table IV-C-11.

In 1970, the average dropout rate for all grades in the Bolivar County schools was 7.5 percent. District 1 (Rosedale) and District 6 (Mound Bayou) had the highest rate, each reporting 8 percent. Shelby district had the lowest average rate for all grades with 4 percent, and both Cleveland and Shaw reported a 5 percent rate of dropouts.

Dropout rates for all districts in Bolivar County were highest at the 10th to 12th grade levels with a 9.6 percent average rate of dropouts. Students enrolled in grades 7 through 9 dropped out at a 7.8 percent rate, and elementary students (kindergarten through sixth grade) had a 4 percent dropout rate. Rosedale and Mound Bayou districts reported the largest percentage of senior high school dropouts with rates of 12 percent and 14 percent, respectively. Shelby had the lowest rate at the same grade level with 4 percent; Cleveland reported 8 percent and Shaw 10 percent. At the junior high level (grades 7 through 9), Rosedale reported 12 percent, Shaw 9 percent, Cleveland 8 percent, Mound Bayou 7 percent and Shelby 3 percent. Elementary students showed the lowest rates for all districts in Bolivar with 6 percent dropout rates in Rosedale and Mound Bayou the highest reported.

Washington County reported a county dropout rate of 6.2 percent which was 1.3 percentage points lower than Bolivar. However, dropouts at the elementary and junior high levels in Washington County were higher than Bolivar. The largest rate for dropouts in 1970 in Washington County was at the senior high school level in the Greenville district with 11 percent. Also, a significantly high rate was reported in District 3 (Western Line) at the elementary and junior high levels with 10 percent of the students dropping out in each category.

In 1971 the rates decreased in both counties, Bolivar reporting 5.8 percent in 1971 as compared to 7.5 percent in 1970, and Washington reporting 6 percent in 1971 as compared to 6.2 percent in 1970. The rates continued to be highest at the senior high school level in both counties. The percentage of junior high dropouts increased in both areas and the elementary dropouts decreased. For Bolivar County, Rosedale district continued to report the highest rate for all grades with a 9 percent rate. However, the Mound Bayou rate declined from 8 percent to 5 percent. In Washington County, District 3 (Western Line) had the highest rate in the county with 8 percent. Particularly high rates of dropouts were reported at the senior high school level in Washington County for 1971 with Leland reporting 17 percent, Western Line 14 percent and Greenville 12 percent.

Data from dropouts by reason for the school years of 1970 and 1971 are presented in Table IV-C-11. The six reasons listed are: (1) unknown, (2) dislike school, (3) other known reason, (4) pregnancy and marriage, (5) moved to unknown place, and (6) all other. The most prevalent reason for both years for all districts was "unknown". The large proportion of

TABLE IV-C-10  
DROPOUT RATES FOR SCHOOL DISTRICTS  
IN WASHINGTON AND BOLIVAR COUNTIES, MISSISSIPPI  
1970 AND 1971

District	K-6 (%)	7-9 (%)	10-12 (%)	All Grades (%)
<u>1970</u>				
Bolivar County Average	4.0%	7.8%	9.6%	7.5%
District 1 - Rosedale	6.0	12.0	12.0	8.0
District 2 - Benoit	N/A	N/A	N/A	N/A
District 3 - Shelby	3.0	3.0	4.0	4.0
District 4 - Cleveland	3.0	8.0	8.0	5.0
District 5 - Shaw	2.0	9.0	10.0	5.0
District 6 - Mound Bayou	6.0	7.0	14.0	8.0
Washington County Average	5.2%	8.0%	6.7%	6.2%
District 1 - Hollandale	5.0	6.0	6.0	5.0
District 2 - Leland	4.0	7.0	8.0	6.0
District 3 - Western Line	10.0	10.0	2.0	9.0
District 20- Greenville	2.0	9.0	11.0	5.0
<u>1971</u>				
Bolivar County Average	3.5%	8.4%	10.6%	5.8%
District 1 - Rosedale	5.0	13.0	18.0	9.0
District 2 - Benoit	N/A	N/A	N/A	N/A
District 3 - Shelby	4.0	7.0	9.0	5.0
District 4 - Cleveland	3.0	8.0	7.0	5.0
District 5 - Shaw	1.0	8.0	13.0	5.0
District 6 - Mound Bayou	4.0	6.0	6.0	5.0
Washington County Average	3.2%	9.0%	12.2%	6.0%
District 1 - Hollandale	3.0	6.0	6.0	4.0
District 2 - Leland	4.0	7.0	17.0	7.0
District 3 - Western Line	4.0	13.0	14.0	8.0
District 20- Greenville	2.0	10.0	12.0	5.0

SOURCE: Ten-year Trend Study on Local School Districts, Mississippi State Department of Education

TABLE IV-C-11

DROPOUTS BY REASON  
FOR BOLIVAR AND WASHINGTON COUNTIES, MISSISSIPPI  
1970

COUNTY: Bolivar  
DISTRICT: Rosedale (District 1)  
TOTAL NUMBER DROPOUTS: 204

	K-6 & Special	7-9	10-12 & Special	All Grades
1. Unknown	69	34	16	119
2. Dislike School	4	15	8	27
3. Other Known Reason	11	6	5	22
4. Pregnancy & Marriage	4	1	3	8
5. Moved to Unknown Place	3	0	0	3
6. All Other	20	4	1	25
TOTAL	111	60	33	204

District 2 (Benoit)<sup>1</sup>

COUNTY: Bolivar  
DISTRICT: Shelby (District 3)  
TOTAL NUMBER DROPOUTS: 74

	K-6 & Special	7-9	10-12 & Special	All Grades
1. Unknown	18	6	16	40
2. Dislike School	0	1	0	1
3. Other Known Reason	2	6	4	12
4. Pregnancy & Marriage	0	1	4	5
5. Moved to Unknown Place	4	0	0	4
6. All Other	7	1	4	12
TOTAL	31	15	28	74

<sup>1</sup>Data for District 2 (Benoit) not available.

TABLE IV-C-11

DROPOUTS BY REASON  
FOR BOLIVAR AND WASHINGTON COUNTIES, MISSISSIPPI  
1970

COUNTY: Bolivar  
DISTRICT: Cleveland (District 4)  
TOTAL NUMBER DROPOUTS: 252

	K-6 & Special	7-9	10-12 & Special	All Grades
1. Unknown	46	46	25	117
2. Dislike School	1	31	26	58
3. Other Known Reason	17	12	3	32
4. Pregnancy & Marriage	0	3	10	13
5. Moved to Unknown Place	3	1	0	4
6. All Other	4	8	6	28
TOTAL	81	101	70	252

COUNTY: Bolivar  
DISTRICT: Shaw (District 5)  
TOTAL NUMBER DROPOUTS: 91

	K-6 & Special	7-9	10-12 & Special	All Grades
1. Unknown	11	18	8	37
2. Dislike School	1	6	1	8
3. Other Known Reason	1	6	10	17
4. Pregnancy & Marriage	0	1	0	1
5. Moved to Unknown Place	1	2	0	2
6. All Other	9	10	6	25
TOTAL	23	43	25	91



TABLE IV-C-11

DROPOUTS BY REASON  
FOR BOLIVAR AND WASHINGTON COUNTIES, MISSISSIPPI  
1970

COUNTY: Bolivar  
DISTRICT: Mound Bayou (District 6)  
TOTAL NUMBER DROPOUTS: 124

	K-6 & Special	7-9	10-12 & Special	All Grades
1. Unknown	45	21	30	96
2. Dislike School	0	0	0	0
3. Other Known Reason	8	3	7	18
4. Pregnancy & Marriage	0	0	1	1
5. Moved to Unknown Place	0	2	3	5
6. All Other	0	2	2	4
TOTAL	53	28	43	124

COUNTY: Washington  
DISTRICT: Hollandale (District 1)  
TOTAL NUMBER DROPOUTS: 108

	K-6 & Special	7-9	10-12 & Special	All Grades
1. Unknown	22	6	1	29
2. Dislike School	15	2	0	17
3. Other Known Reason	5	13	3	21
4. Pregnancy & Marriage	0	5	4	9
5. Moved to Unknown Place	12	2	0	14
6. All Other	8	2	8	18
TOTAL	62	30	16	108

TABLE IV-C-11

DROPOUTS BY REASON  
FOR BOLIVAR AND WASHINGTON COUNTIES, MISSISSIPPI  
1970

COUNTY: Washington  
DISTRICT: Leland (District 2)  
TOTAL NUMBER DROPOUTS: 132

	K-6 & Special	7-9	10-12 & Special	All Grades
1. Unknown	10	27	17	54
2. Dislike School	15	6	1	22
3. Other Known Reason	24	2	2	28
4. Pregnancy & Marriage	1	1	4	6
5. Moved to Unknown Place	3	4	1	8
6. All Other	5	4	4	14
<b>TOTAL</b>	<b>58</b>	<b>44</b>	<b>30</b>	<b>132</b>

COUNTY: Washington  
DISTRICT: Western Line (District 3)  
TOTAL NUMBER DROPOUTS: 163

	K-6 & Special	7-9	10-12 & Special	All Grades
1. Unknown	1	6	4	11
2. Dislike School	0	1	0	1
3. Other Known Reason	22	4	0	26
4. Pregnancy & Marriage	0	1	0	1
5. Moved to Unknown Place	58	27	0	85
6. All Other	38	1	0	39
<b>TOTAL</b>	<b>119</b>	<b>40</b>	<b>4</b>	<b>163</b>

TABLE IV-C-11

DROPOUTS BY REASON  
FOR BOLIVAR AND WASHINGTON COUNTIES, MISSISSIPPI  
1970

COUNTY: Washington  
DISTRICT: Greenville (District 4)  
TOTAL NUMBER DROPOUTS: 646

	K-6 & Special	7-9	10-12 & Special	All Grades
1. Unknown	40	17	32	89
2. Dislike School	15	116	56	187
3. Other Known Reason	18	13	17	49
4. Pregnancy & Marriage	2	22	57	81
5. Moved to Unknown Place	9	14	10	33
6. All Other	55	0	53	108
TOTAL	139	282	225	646

TABLE IV-C-11  
DROPOUTS BY REASON  
FOR BOLIVAR AND WASHINGTON COUNTIES, MISSISSIPPI  
1971

COUNTY: Bolivar  
DISTRICT: Rosedale (District 1)  
TOTAL NUMBER DROPOUTS: 237

	K-6 & Special	7-9	10-12 & Special	All Grades
1. Unknown	59	64	25	148
2. Dislike School	1	0	17	18
3. Other Known Reason	7	23	2	32
4. Pregnancy & Marriage	2	1	5	8
5. Moved to Unknown Place	3	0	2	5
6. All Other	22	0	4	26
TOTAL	94	88	55	237

District 2 (Benoit)<sup>1</sup>

COUNTY: Bolivar  
DISTRICT: Shelby (District 3)  
TOTAL NUMBER DROPOUTS: 95

	K-6 & Special	7-9	10-12 & Special	All Grades
1. Unknown	24	22	15	61
2. Dislike School	0	1	0	1
3. Other Known Reason	9	3	5	17
4. Pregnancy & Marriage	2	5	3	10
5. Moved to Unknown Place	2	0	0	2
6. All Other	1	0	3	4
TOTAL	38	31	26	95

<sup>1</sup>Data for District 2 (Benoit) not available

TABLE IV-C-11

DROPOUTS BY REASON  
FOR BOLIVAR AND WASHINGTON COUNTIES, MISSISSIPPI  
1971

COUNTY: Bolivar  
DISTRICT: Cleveland (District 4)  
TOTAL NUMBER DROPOUTS: 229

	K-6 & Special	7-9	10-12 & Special	All Grades
1. Unknown	21	65	24	116
2. Dislike School	9	18	14	43
3. Other Known Reason	11	11	4	33
4. Pregnancy & Marriage	0	2	8	10
5. Moved to Unknown Place	5	0	1	6
6. All Other	25	5	6	36
<b>TOTAL</b>	<b>71</b>	<b>101</b>	<b>57</b>	<b>229</b>

COUNTY: Bolivar  
DISTRICT: Shaw (District 5)  
TOTAL NUMBER DROPOUTS: 70

	K-6 & Special	7-9	10-12 & Special	All Grades
1. Unknown	1	2	3	6
2. Dislike School	0	2	4	6
3. Other Known Reason	0	6	4	10
4. Pregnancy & Marriage	0	2	3	5
5. Moved to Unknown Place	0	2	2	4
6. All Other	12	19	8	39
<b>TOTAL</b>	<b>13</b>	<b>33</b>	<b>24</b>	<b>70</b>



TABLE IV-C-11

DROPOUTS BY REASON  
FOR BOLIVAR AND WASHINGTON COUNTIES, MISSISSIPPI  
1971

COUNTY: Bolivar  
DISTRICT: Mound Bayou (District 6)  
TOTAL NUMBER DROPOUTS: 73

	K-6 & Special	7-9	10-12 & Special	All Grades
1. Unknown	22	9	9	40
2. Dislike School	0	0	0	0
3. Other Known Reason	3	9	4	21
4. Pregnancy & Marriage	0	0	0	0
5. Moved to Unknown Place	0	3	2	5
6. All Other	0	3	4	7
<b>TOTAL</b>	<b>30</b>	<b>24</b>	<b>19</b>	<b>73</b>

COUNTY: Washington  
DISTRICT: Hollandale (District 1)  
TOTAL NUMBER DROPOUTS: 81

	K-6 & Special	7-9	10-12 & Special	All Grades
1. Unknown	11	10	1	22
2. Dislike School	0	0	1	1
3. Other Known Reason	5	7	2	14
4. Pregnancy & Marriage	0	3	12	15
5. Moved to Unknown Place	15	6	0	21
6. All Other	4	3	1	8
<b>TOTAL</b>	<b>35</b>	<b>29</b>	<b>17</b>	<b>81</b>

TABLE IV-C-11

DROPOUTS BY REASON  
FOR BOLIVAR AND WASHINGTON COUNTIES, MISSISSIPPI  
1971

COUNTY: Washington  
DISTRICT: Leland (District 2)  
TOTAL NUMBER DROPOUTS: 192

	K-6 & Special	7-9	10-12 & Special	All Grades
1. Unknown	40	43	64	147
2. Dislike School	3	0	0	3
3. Other Known Reason	21	6	1	28
4. Pregnancy & Marriage	0	3	0	3
5. Moved to Unknown Place	0	0	0	0
6. All Other	10	1	0	11
<b>TOTAL</b>	<b>74</b>	<b>53</b>	<b>65</b>	<b>192</b>

COUNTY: Washington  
DISTRICT: Western Line (District 3)  
TOTAL NUMBER DROPOUTS: 175

	K-6 & Special	7-9	10-12 & Special	All Grades
1. Unknown	23	43	24	90
2. Dislike School	1	0	0	1
3. Other Known Reason	27	22	6	55
4. Pregnancy & Marriage	0	2	3	5
5. Moved to Unknown Place	2	6	5	13
6. All Other	2	6	3	11
<b>TOTAL</b>	<b>55</b>	<b>79</b>	<b>41</b>	<b>175</b>

TABLE IV-C-11

DROPOUTS BY REASON  
FOR BOLIVAR AND WASHINGTON COUNTIES, MISSISSIPPI  
1971

COUNTY: Washington  
DISTRICT: Greenville (District 4)  
TOTAL NUMBER DROPOUTS: 615

	K-6 & Special	7-9	10-12 & Special	All Grades
1. Unknown	51	50	81	182
2. Dislike School	0	106	59	165
3. Other Known Reason	7	3	9	19
4. Pregnancy & Marriage	0	25	36	61
5. Moved to Unknown Place	15	15	8	38
6. All Other	53	69	28	150
TOTAL	126	268	221	615

SOURCE: Mississippi State Department of Education, Division of Administration and Finance, Jackson, Mississippi.

TABLE IV-C-12  
GENERAL SUMMARY OF PUBLIC SCHOOL DATA  
FOR BOLIVAR AND WASHINGTON COUNTIES  
1970-1971

	1970			
	K-6 & Special	7-9	10-12 & Special	All Grades
<u>Bolivar District #1 - Rosedale</u>				
Days Taught	177	177	177	177
In Migration	211	63	35	309
Total Gross Membership	1,763	521	288	2,572
Out Migration	25	8	4	37
Total Net Membership	1,737	513	283	2,533
Transported Students	20,201	6,435	3,531	30,167
Non-transported Students	11,762	3,126	1,818	16,706
Aggregated Absences	2,316	578	238	3,132
<u>Bolivar District #2 - Benoit</u>				
Days Taught	178	178	178	178
In Migration	86	40	26	152
Total Gross Membership	745	347	229	1,321
Out Migration	5	2	1	8
Total Net Membership	740	344	228	1,312
Transported Students	13,412	6,324	4,115	23,851
Non-transported Students	277	298	278	853
Aggregated Absences	395	149	90	634
<u>Bolivar District #3 - Shelby</u>				
Days Taught	179	179	179	179
In Migration	135	60	33	228
Total Gross Membership	1,122	514	282	1,918
Out Migration	12	5	4	21
Total Net Membership	1,109	508	278	1,895
Transported Students	12,088	5,749	2,868	20,705
Non-transported Students	9,032	3,944	2,418	15,394
Aggregated Absences	893	417	212	1522
<u>Bolivar District #4 - Cleveland</u>				
Days Taught	178	178	178	178
In Migration	333	144	93	575
Total Gross Membership	2,700	1,207	841	4,748
Out Migration	39	17	9	65
Total Net Membership	2,660	1,190	832	4,682
Transported Students	16,201	8,074	4,969	29,244
Non-transported Students	33,434	13,819	10,318	57,571
Aggregated Absences	2,828	1,705	1,197	5,730

TABLE IV-C-12

	K-6 & Special	7-9	10-12 & Special	All Grades
<u>Bolivar District #5 - Shaw</u>				
Days Taught	178	178	178	178
In Migration	118	56	29	203
Total Gross Membership	999	474	248	1,721
Out Migration	10	6	3	19
Total Net Membership	989	467	245	1,701
Transported Students	12,093	5,593	2,378	20,064
Non-transported Students	5,996	3,083	2,116	11,195
Aggregated Absences	1,510	604	360	2,474
<u>Bolivar District #6 - Mound Bayou</u>				
Days Taught	179	179	179	179
In Migration	104	45	37	186
Total Gross Membership	859	333	311	1,553
Out Migration	11	4	6	21
Total Net Membership	848	379	305	1,532
Transported Students	9,521	3,709	2,657	15,887
Non-transported Students	5,913	3,287	2,897	12,097
Aggregated Absences	1,389	538	485	2,412
<u>Washington District #1 - Hollandale</u>				
Days Taught	175	175	175	175
In Migration	156	59	39	254
Total Gross Membership	1,304	501	173	1,978
Out Migration	16	5	9	30
Total Net Membership	1,287	495	164	1,946
Transported Students	12,893	5,077	1,490	19,460
Non-transported Students	10,698	4,116	1,743	16,557
Aggregated Absences	1,483	463	140	2,086
<u>Washington District #2 - Leland</u>				
Days Taught	175	175	175	175
In Migration	226	86	66	378
Total Gross Membership	1,367	622	370	2,359
Out Migration	24	9	10	43
Total Net Membership	1,342	613	359	2,314
Transported Students	12,187	4,963	2,149	19,299
Non-transported Students	12,430	6,515	4,554	23,499
Aggregated Absences	1,828	564	460	2,852



TABLE IV-C-12

	K-6 & Special	7-9	10-12 & Special	All Grades
<u>Washington District #3 - Western Line</u>				
Days Taught	178	176	178	178
In Migration	174	80	59	313
Total Gross Membership	1,236	400	287	1,923
Out Migration	29	16	12	57
Total Net Membership	1,207	384	274	1,865
Transported Students	20,656	7,063	4,675	12,394
Non-transported Students	940	103	577	1,620
Aggregated Absences	2,223	359	176	2,758
<u>Washington District #4 - Greenville</u>				
Days Taught	178	178	178	178
In Migration	868	369	260	1,497
Total Gross Membership	7,107	3,036	2,149	12,292
Out Migration	101	54	37	192
Total Net Membership	7,006	2,981	2,112	12,099
Transported Students	12,821	5,811	4,594	23,226
Non-transported Students	118,501	49,738	35,235	203,474
Aggregated Absences	7,615	3,615	2,220	13,450

SOURCE: State Department of Education, Division of Administration and Finance,  
Jackson, Mississippi

TABLE IV-C-12

	1971			
	K-6 & Special	7-9	10-12 & Special	All Grades
<u>Bolivar District #1 - Rosedale</u>				
Days Taught	177	177	177	177
In Migration	217	85	43	345
Total Gross Membership	1,795	676	322	2,793
Out Migration	30	16	10	56
Total Net Membership	1,729	660	312	2,701
Transported Students	17,411	8,126	3,325	28,862
Non-transported Students	14,809	4,064	2,529	21,402
Aggregated Absences	1,922	813	355	3,090
<u>Bolivar District #2 - Benoit</u>				
Days Taught	180	180	180	180
In Migration	81	30	23	134
Total Gross Membership	702	253	200	1,055
Out Migration	3	3	1	7
Total Net Membership	698	250	198	1,146
Transported Students	12,542	4,773	3,733	21,048
Non-transported Students	212	0	60	272
Aggregated Absences	1,211	258	192	1,661
<u>Bolivar District #3 - Shelby</u>				
Days Taught	180	180	180	180
In Migration	127	56	36	219
Total Gross Membership	1,049	465	288	1,802
Out Migration	13	8	6	27
Total Net Membership	1,036	457	281	1,774
Transported Students	10,692	4,832	2,976	18,500
Non-transported Students	9,105	4,031	2,394	15,530
Aggregated Absences	968	345	269	1,582
<u>Bolivar District #4 - Cleveland</u>				
Days Taught	178	178	178	178
In Migration	329	147	94	570
Total Gross Membership	2,731	1,228	790	4,749
Out Migration	29	17	9	55
Total Net Membership	2,701	1,211	781	4,693
Transported Students	16,359	7,276	3,079	26,714
Non-transported Students	34,317	15,112	11,289	60,718
Aggregated Absences	2,666	1,606	1,115	5,387

TABLE IV-C-12

	K-6 & Special	7-9	10-12 & Special	All Grades
<u>Bolivar District #5 - Shaw</u>				
Days Taught	180	180	180	180
In Migration	116	53	22	191
Total Gross Membership	950	425	183	1,558
Out Migration	13	8	3	24
Total Net Membership	936	417	180	1,533
Transported Students	11,988	4,832	1,726	18,546
Non-transported Students	5,539	3,010	1,693	10,242
Aggregated Absences	1,208	534	205	1,947
<u>Bolivar District #6 - Mound Bayou</u>				
Days Taught	179	179	179	179
In Migration	94	47	35	176
Total Gross Membership	864	408	306	1,578
Out Migration	7	3	2	12
Total Net Membership	796	405	303	1,504
Transported Students	9,094	4,223	2,487	15,804
Non-transported Students	5,764	3,318	3,131	12,213
Aggregated Absences	995	506	403	1,909
<u>Washington District #1 - Hollandale</u>				
Days Taught	177	177	177	177
In Migration	141	58	35	234
Total Gross Membership	1,213	493	296	2,002
Out Migration	9	5	3	17
Total Net Membership	1,203	488	292	1,983
Transported Students	11,744	4,449	2,777	18,970
Non-transported Students	10,705	4,682	2,702	18,089
Aggregated Absences	1,220	493	289	2,002
<u>Washington District #2 - Leland</u>				
Days Taught	176	176	176	176
In Migration	207	90	47	344
Total Gross Membership	1,697	743	333	2,828
Out Migration	23	11	8	42
Total Net Membership	1,673	732	379	2,784
Transported Students	14,777	5,271	2,914	22,962
Non-transported Students	15,663	8,361	4,099	28,123
Aggregated Absences	2,300	869	474	3,643

TABLE IV-C-12

	K-6 & Special	7-9	10-12 & Special	All Grades
<u>Washington District #3 - Western Line</u>				
Days Taught	176	176	176	176
In Migration	169	80	38	287
Total Gross Membership	1,320	631	292	2,243
Out Migration	26	13	8	47
Total Net Membership	1,294	618	283	2,195
Transported Students	21,926	10,326	4,354	36,606
Non-transported Students	1,689	996	823	3,508
Aggregated Absences	1,768	827	403	3,003
<u>Washington District #4 - Greenville</u>				
Days Taught	176	176	176	176
In Migration	865	348	233	1,445
Total Gross Membership	6,878	2,810	1,895	11,583
Out Migration	118	55	34	207
Total Net Membership	6,759	2,754	1,860	11,373
Transported Students	4,825	4,733	2,726	12,284
Non-transported Students	120,611	45,964	31,501	198,076
Aggregated Absences	7,048	3,423	2,400	12,871

SOURCE: State Department of Education, Division of Administration and Finance,  
Jackson, Mississippi

the dropouts in the unknown category is significant in that it indicates that many students simply stopped attending classes and could not be located or that no effort was made on the part of the school system to trace the dropouts. Since there was no mandatory school attendance law in effect in Mississippi during this time period, it is possible that no concentrated effort was made to trace the dropouts.

"Dislike school" was the reason with the second highest frequency in both Washington and Bolivar Counties. The larger, more urban school districts of Cleveland in Bolivar County and Greenville in Washington County had the greatest incidence of dropouts attributed to "dislike school". In 1970, Cleveland district reported that 58 of 252 total dropouts stopped attending because they disliked school. For the same year, Greenville reported 137 of 646 dropouts leaving school for the same reason. In both districts, the largest proportion of these dropouts were enrolled in grades 7 through 9.

No discernible trend was indicated by the incidence of dropouts in the other reason categories.

#### Private and Parochial Schools

We were unable to obtain a complete data set for private and parochial schools in Bolivar and Washington Counties for our six year trend study. However, we do have complete enrollment figures for all private and parochial schools operating in Bolivar and Washington Counties in 1970.

Table IV-C-13 lists the name of the school, whether the school is private or parochial, the location (town), the location in terms of the public school district and the 1970 enrollment. In Bolivar County, there were four private or parochial schools in operation in 1970 with a total enrollment of 1,077 students. Benoit Union, located in the town of Benoit in Bolivar County, had a total enrollment of 86 students in grades 1 through 4. The racial composition of the school was 100 percent white, and 1969 was its first year of operation. Presbyterian Day School, located in Cleveland, serviced grades kindergarten through 5 in 1970 with an enrollment of 113 students. The racial composition was 100 percent white, and the school began operation in 1968. Bayou Academy is the largest private school in Bolivar County with schools located in the towns of Duncan, Skene, Boyle and Shaw. Bayou Academy serviced grades 1 through 12 in 1970 with an enrollment of 675 students. The racial composition was 100 percent white, and the yearly tuition was \$470 for grades 1 through 6, \$520 for grades 7 through 10, and \$570 for grades 11 and 12. St. Gabriel is a parochial school located in Mound Bayou which has been in operation since 1954. The 1970 enrollment for grades kindergarten through eighth grade was 203. The racial composition is 100 percent black or minority, making St. Gabriel the only private or parochial school in Bolivar County servicing black students.

Washington County in 1970 reported 7 private and parochial schools in operation with a total enrollment of 2,209 students. Five of the seven schools operating were located in the city of Greenville. Two other schools,



TABLE IV-C-13

## PRIVATE AND PAROCHIAL SCHOOL ENROLLMENT, 1970

Name of School	Private or Parochial	Location	Location in Public School District	1970 Enrollment
<u>Bolivar</u>				
Benoit Union	Private	Benoit	Bolivar District 2	86
Bayou Academy	Private	Duncan, Skene Boyle, Shaw	Bolivar Districts 3, 4 and 5	675
Presbyterian Day School	Parochial	Cleveland	Bolivar District 4	113
St. Gabriel	Parochial	Mound Bayou	Bolivar District 6	203
				<u>1,077 Total</u>
<u>Washington</u>				
Deer Creek School	Private	Arcola	Hollandale	467
Leland Academy	Private	Leland	Leland	120
Greenville Christian	Parochial	Greenville	Greenville	472
Our Lady of Lourdes	Parochial	Greenville	Greenville	282
Sacred Heart	Parochial	Greenville	Greenville	211
St. Joseph	Parochial	Greenville	Greenville	317
Washington School	Private	Greenville	Greenville	367
				<u>2,209 Total</u>

SOURCE: Specific inquiries to appropriate authorities and resulting responses.

both private, were located in Hollandale and Leland. Dear Creek School in Hollandale had a 1970 enrollment of 467 with a predominantly white racial composition. Leland Academy located in the town of Leland in Washington County had an enrollment of 120 students in grades 1 through 8. Tuition was \$455 per year and the racial composition was 100 percent white. Of the five schools located in Greenville, four were parochial and one was private. Washington School, the private institution, began operation in 1970 with an enrollment of 367 students in grades 1 through 12. Tuition was \$500 per year for elementary students and \$600 for secondary. The racial composition of Washington School was 100 percent white in 1970. The four parochial schools in Greenville are Greenville Christian, Our Lady of Lourdes, Sacred Heart and St. Joseph. Greenville Christian serviced grades kindergarten through 6th grade in 1970 with an enrollment of 472. The tuition averages \$480 per year and the racial composition in 1970 was all white. Our Lady of Lourdes had a 1970 enrollment of 282 students in grades kindergarten through sixth grade. The racial composition is reported as predominantly white. Sacred Heart is the only private or parochial school in Washington County reporting a substantial number of black students. The 1970 enrollment was 211 students in grades kindergarten through sixth grade. Sacred Heart has been operating in Greenville since 1912 and has reported a totally black enrollment since its founding. On the average, the enrollment at Sacred Heart is 75 percent non-Catholic students and 25 percent Catholic students. St. Joseph's services secondary students (grades 7-12) in Greenville. The 1970 enrollment was 290. The racial composition averages 97 percent white. Tuition is \$38 per month for Catholic students residing in the parish, \$500 per year for non-parish Catholic students and \$600 per year for all non-Catholics.

#### Technical and Vocational Education

Technical and Vocational Education courses offered in the public schools in both Bolivar and Washington Counties include training in Agriculture, Marketing, Health, Home Economics, Business and Office, Trade and Industry, and Occupational Orientation. Table IV-C-15 indicates the total enrollment for each subject area by county for the years 1965 through 1970, inclusive.

Overall enrollment in technical and vocational courses in the Bolivar and Washington County schools decreased from 1965 to 1970 with Bolivar County reporting a 17 percent decline in total enrollment and Washington County reporting a 13 percent decline.

TABLE IV-C-14

## Enrollment for Vocational and Technical Training in

## Bolivar and Washington Counties

1965-1970

Bolivar County						
	1965	1966	1967	1968	1969	1970
Total Enrollment	1643	1597	1666	1418	1368	1358
Agriculture	766	778	699	724	563	443
Marketing	20	14	20	19	171*	16
Health	55*	11	11	18	26	0
Home Economics	744	712	794	594	463	706
Business and Office	0	0	81	13	20	10
Trade and Industrial	58	82	72	50	125	72
Occupational Orientation	**	**	**	**	**	111
Washington County						
Total Enrollment	2729	2595	3034	2368	2799	2373
Agriculture	781	747	746	636	649	394
Marketing	268	42	136	40	283	153
Health	0	0	0	0	0	10
Home Economics	1297	1291	1414	1138	1200	887
Business and Office	0	175	418*	171	190	122
Trade and Industrial	383	340	320	383	477	671
Occupational Orientation	**	**	**	**	**	136

\* Adult classes were offered this term

\*\* Course was not offered during this school term

SOURCE: Mississippi State Department of Education, Jackson, Mississippi

The major factor contributing to the overall decline was the large decrease in the number of students enrolled in vocational agriculture courses. Enrollment in vocational agriculture for Bolivar County dropped from 766 students in 1965 to 443 students in 1970, a 42 percent decrease. Washington County agriculture enrollment totaled 781 students in 1965 as compared to 394 students in 1970, a 50 percent decrease. The systematic decline in agriculture enrollment is attributable to a waning interest in agricultural occupations in both Bolivar and Washington Counties as evidenced by the decline in the number of agriculturally related jobs in the area.

Although participation in vocation agriculture training showed a marked decline, enrollment in trade and industrial training showed an increase from 1965 to 1970, particularly in Washington County where trade and industrial course enrollment rose 75 percent.

### Higher Education

Delta State College is the only college or university located in the target and/or comparison areas. It is located in Cleveland, Mississippi occupying 263 acres in Bolivar County. It was established in 1924 and was originally called Delta State Teachers College.

The college is a State-funded institution. Tuition and other related fees for in-State students are \$217.00 per semester. Living expenses for dormitory students are estimated at \$339.00 per semester making the yearly cost for on-campus, in-State students approximately \$1,100.00 per year. Expenses for commuting students or students not living in campus housing are approximately \$425.00 per year.<sup>2</sup>

Admission requirements for entering freshman include a diploma from an accredited high school and fifteen acceptable units of credit. An ACT composite score of 15 or above for in-State students and 20 or above for out-of-State students is also required for non-probationary acceptance.

Delta State is a liberal arts institution which places much emphasis on teacher education. Full time student enrollment totaled 1,981 students in 1966 and increased to 2,552 in 1970. (See Table IV-C-16). This 22 percent increase over the five year period occurred primarily between 1966 and 1968. For all five years, students residing in Bolivar and Washington Counties comprised 54 percent or more of the total enrollment. The percentage of Bolivar County resident students increased from 33.1 percent in 1966 to 43.1 percent in 1970. Washington County resident students accounted for 21.2 percent of the Delta State College enrollment in 1966 and 21.0 percent in 1970.

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2. Source: Delta State College Bulletin, 1972-1973.

TABLE IV-C-15

Delta State College in Cleveland, Mississippi Enrollment  
by Residents of Bolivar and Washington Counties, Mississippi

1966-1970

	1966	1967	1968	1969	1970
Total Enrollment	1981	2202	2433	2461	2552
Bolivar County	656	804	956	961	1099
Washington County	420	468	466	542	535
Total-both Counties	1076	1272	1422	1503	1634
Percent of Total-Bolivar	33.1	36.5	39.3	39.0	43.1
Percent of Total-Washington	21.2	21.3	19.2	22.0	21.0
Percent of Total-Both Counties	54.3	57.8	58.4	61.1	64.0

SOURCE: Office of the Registrar  
Delta State College  
Cleveland, Mississippi



IV-D  
THE ECONOMICS OF BOLIVAR AND WASHINGTON COUNTIES

Introduction

This entire section reflects the respective total economic pictures in Bolivar and Washington Counties, during the period under study (1965-1970).

A general trend in the United States began to emerge after World War II - fewer farms operating on larger acreage. Bolivar and Washington Counties provide exceptions to this pattern but only in terms of timing. The extent to which the agricultural sector became a declining force in the respective economies of Bolivar and Washington Counties is reflected in this section. Bolivar and Washington Counties, in differing degrees during the period under study (1965-1970), were undergoing substantive economic diversification.

The nature and extent of diversification is primarily indicated in the accompanying subsections headed as follows:

- Personal income
- Employment
- Agriculture

Other facets of the economic situation in Bolivar and Washington Counties reflected in this section include:

- Sales and Personal Income Tax
- Transportation
- Housing.

The character of the agricultural sector has changed not only in terms of number and size of farms but in terms of degree of mechanization of basic farming processes (soil preparation, fertilization, harvesting, and so on), and correspondingly in the reduction in the number and kind of farm workers needed and employed.

The diversification of the economies of the two counties are evidenced in (1) the trends in personal income by source, and (2) the increases in nonagricultural wage and salaried employment.

Even within the agricultural sector, some diversification exists, shifting from declining-priced products (e.g., cotton) to other products (e.g., soybeans).

TABLE IV D-1  
CIVILIAN LABOR FORCE, TOTAL EMPLOYMENT, AND UNEMPLOYMENT RATES FOR THE STATE OF  
MISSISSIPPI, BOLIVAR AND WASHINGTON COUNTIES, 1965-1970  
(figures in thousands of employees)

Categories	1965	1966	1967	1968	1969	1970	% Change 1965-1970
Total Civilian Labor Force							
Mississippi	773.6	788.5	793.7	801.5	816.5	829.0	7%
Bolivar County	16.1	16.3	17.3	17.6	17.4	17.9	11%
Washington County	26.4	26.4	27.8	27.6	27.6	28.5	8%
Total Employment							
Mississippi	736.9	755.5	755.3	765.3	782.0	788.5	7%
Bolivar County	15.5	15.4	16.6	16.8	16.8	17.3	11%
Washington County	25.1	25.0	25.5	25.1	25.9	27.2	8%
Unemployment Rate							
Mississippi	4.7%	4.2%	4.8%	4.5%	4.2%	4.8%	
Bolivar County	3.4%	5.6%	4.2%	4.6%	3.3%	3.5%	
Washington County	5.1%	5.3%	8.5%	8.8%	5.8%	4.7%	

SOURCE: Mississippi Employment Security Commission-January Benchmarks, Unpublished Data.

NOTE: Subtotals may not add up to total in certain instances due to rounding.

## Employment in Bolivar and Washington Counties

### Growth of the Labor Force

There has been a gain in the civilian labor force (8 percent) and total employment (8 percent) in Washington County similar in rate of growth to that occurring in the State of Mississippi as a whole (7 percent and 7 percent, respectively). In Bolivar County, there was a somewhat larger gain in civilian labor force and total employment (11 percent in each case).

Washington County experienced relatively higher unemployment rates in the period 1966-1969 (5-9 percent) than did either Bolivar County (3-6 percent) or the State of Mississippi (4-5 percent). See Table IV-D-1.

The economy of Bolivar County has been more dependent on agricultural activity than has Washington County (documented in the two accompanying sections on personal income and agriculture). The implication of this is that with Bolivar County, and to a lesser extent with Washington County, the significant degree of dependence on an agricultural economy means that the labor force is at least partially composed of unskilled, poorly-educated or illiterate workers. Such a labor force is reliant on seasonal farm employment in a dwindling agricultural sector becoming more and more mechanized, resulting in high levels of under-employment or no employment. What is disturbing is that virtually no statistics are available to document either the conditions of no employment<sup>1</sup> or under-employment of farm workers in these two counties.

Agriculture is exempt from the Mississippi Employment Security Law; therefore, the unemployment statistics derived by the Mississippi Employment Security Commission do not include unemployed farm workers. Since farm workers are not included in calculating an unemployment rate, this statistic is misleading. For example, the unemployment rate for 1969 in Bolivar County is indicated at the relatively low rate of 3.3 percent of the civilian labor force. During the same year, an estimated (no actual count was made) 4,900<sup>2</sup> persons were employed in agriculture, or approximately 25 percent of the work force. Any appreciable proportion of those in agriculture not working during that year would have increased the unemployment rate. For example, if 10 percent of the persons in agriculture were not working and were included in the unemployment calculation, the unemployment rate would be almost double the value reported.

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1. We use the phrase "no employment" rather than unemployment because in labor force parlance "unemployment" refers to "not working and actually seeking work".
  2. This figure appears to be understated. According to the 1969 Census of Agriculture, there were some 6,851 hired farm laborers and almost 700 farm operators (owners and tenants).

## Character of the Labor Force: Employment by Industry

Agricultural employment made up a substantial portion (41 percent) of total employment in Bolivar County in 1965. See Table IV-D-2. By 1970, the agricultural employment figure had dipped to 28 percent in Bolivar County, with correspondingly large increases in non-agricultural wage and salaried employment. In 1965, 39 percent of the employed workers in Bolivar County were in the non-agricultural wage and salaried employment category. By 1970, over half (56 percent) of employed workers were included in this category. Thus, by 1970, the economy in Bolivar County was much more diversified than in 1965, with substantial increases in both manufacturing and non-manufacturing wage and salaried employment.

Employment fell in Bolivar County in other non-agricultural jobs (e.g., non-agricultural self-employed, unpaid family workers and domestic workers in private household) as well as the agricultural sector in the 1965-1970 period.

The pattern of employment in Washington County in the 1965-1970 period paralleled the state-wide pattern. The relatively small proportion of employment occurring in the agricultural sector in 1965 (16 percent in Washington County and 18 percent in the State of Mississippi) dwindled even further by 1970 (falling to 13 percent in Washington County and 13 percent in the State, respectively).

Increases in the proportion of wage and salaried employees occurred, mainly in non-manufacturing activities, both in the State and in Washington County. See Table IV-D-2.

As in Bolivar County, employment in other non-agricultural categories dipped in the 1965-1970 period both in the State and in Washington County.

Table IV-D-3 shows clearly that employment in Bolivar County grew markedly in both the manufacturing and non-manufacturing subcategories of the non-agricultural wage and salaried employment category in the 1965-1970 period. In fact, manufacturing grew more rapidly than did non-manufacturing employment in Bolivar County in the 1965-1970 interval. During the same period in Washington County and Mississippi, the growth in both manufacturing and non-manufacturing employment was about 20 percent.

## Employment in Non-Manufacturing Industries<sup>3</sup>

The Service and Miscellaneous subcategory of the non-manufacturing industries category in Bolivar County grew more markedly than other of its subcategories. A similar pattern emerged in Washington County. The service subcategory did not evidence so distinctive a pattern in Mississippi as a whole, however. See Table IV-D-4.

Growth in employment in the government subcategory was also apparent in Bolivar County. Gains in this sector of employment were not so noticeable in Washington County or the State as a whole.

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3. Data were not available on a county basis as to subcategories of manufacturing industries.



TABLE IV-D-2--EMPLOYMENT BY INDUSTRY FOR MISSISSIPPI, BOLIVAR AND WASHINGTON COUNTIES, 1965-1970

Employment by Industry	1965	1966	1967	1968	1969	1970
Mississippi						
Total Employment	100%	100%	100%	100%	100%	100%
Non-agricultural-wage and salaried employment	66	69	70	72	73	73
Manufacturing, total	21	22	22	23	23	23
Non-manufacturing, total	45	47	48	49	49	50
Other non-agricultural employment <sup>1/</sup>	16	15	16	15	14	14
Agricultural employment	18	16	14	14	13	13
Bolivar County						
Total Employment	100%	100%	100%	100%	100%	100%
Non-agricultural-wage and salaried employment	39	42	48	53	53	56
Manufacturing, total	10	11	13	14	13	15
Non-manufacturing, total	29	31	35	39	40	41
Other non-agricultural employment <sup>1/</sup>	20	20	19	18	18	16
Agricultural employment	41	38	33	29	29	28
Washington County						
Total Employment	100%	100%	100%	100%	100%	100%
Non-agricultural-wage and salaried employment	64	64	66	67	69	70
Manufacturing, total	18	17	18	18	19	19

<sup>1/</sup> Includes non-agricultural self-employed and unpaid family workers, and domestic workers in private households.



TABLE IV-D-2 --EMPLOYMENT BY INDUSTRY FOR MISSISSIPPI, BOLIVAR AND WASHINGTON COUNTIES,  
1965-1970--continued

Employment by Industry	1965	1966	1967	1968	1969	1970
Washington County--continued						
Non-manufacturing, total	46	47	48	49	50	51
Other non-agricultural employment <sup>1/</sup>	20	20	19	19	18	17
Agricultural employment	16	16	15	14	13	13

SOURCE: Mississippi Employment Security Commission-January Benchmark, Unpublished Data.

<sup>1/</sup> Includes non-agricultural self-employed and unpaid family workers, domestic workers in private households.

NOTE: Subtotals may not add to totals due to rounding

TABLE IV-D-3 --EMPLOYMENT BY INDUSTRY FOR MISSISSIPPI, BOLIVAR AND WASHINGTON COUNTIES, 1965-1970  
(figures in thousands of employees)

Employment by Industry	1965	1966	1967	1968	1969	1970	% Change 1965-1970
Mississippi							
Total Employment	736.9	755.5	755.3	765.3	782.0	788.5	7%
Nonagricultural-wage and salaried employment	485.3	519.3	531.9	547.8	567.8	577.2	19%
Manufacturing, total	152.6	166.2	167.0	175.0	182.1	181.7	19%
Non-manufacturing, total	332.6	353.1	364.9	372.7	385.7	395.5	19%
Other non-agricultural employment <sup>1/</sup>	117.8	117.0	116.7	112.1	110.5	109.0	- 7%
Agricultural employment	113.8	119.2	109.2	105.4	103.7	102.3	-23%
Bolivar County							
Total Employment	15.5	15.4	16.6	16.8	16.8	17.3	11%
Non-agricultural-wage and salaried employment	6.1	6.4	8.0	8.9	8.9	9.7	59%
Manufacturing, total	1.5	1.6	2.2	2.4	2.2	2.7	79%
Non-manufacturing, total	4.6	4.8	5.8	6.5	6.7	7.0	53%
Other non-agricultural employment <sup>1/</sup>	3.1	3.2	3.2	3.0	3.0	2.9	- 9%
Agricultural employment	6.3	5.8	5.4	4.9	4.9	4.8	-24%
Washington County							
Total Employment	25.1	25.0	25.5	25.1	25.9	27.2	8%
Non-agricultural-wage and salaried employment	15.9	15.9	16.9	16.9	17.8	19.1	20%
Manufacturing, total	4.4	4.3	4.6	4.6	5.0	5.3	20%
Non-manufacturing, total	11.5	11.5	12.3	12.3	12.8	13.8	20%

<sup>1/</sup> Includes non-agricultural self-employed and unpaid family workers, and domestic workers in private households.

TABLE IV-D-3 --EMPLOYMENT BY INDUSTRY FOR MISSISSIPPI, BOLIVAR AND WASHINGTON COUNTIES, 1965-1970--continued

Employment by Industry	1965	1966	1967	1968	1969	1970	% Change 1965-1970
Washington County--continued							
Other non-agricultural employment <sup>1/</sup>	5.1	5.1	4.9	4.8	4.7	4.7	- 7%
Agricultural employment	4.1	4.0	3.7	3.4	3.4	3.4	-17%

SOURCE: Mississippi Employment Security Commission-January Benchmarks, Unpublished Data.

NOTE: Subtotals may not add up to total in certain instances due to rounding.

<sup>1/</sup> Includes non-agricultural self-employed and unpaid family workers, and domestic workers in private households.

TABLE IV-D-4 --EMPLOYMENT IN NONMANUFACTURING INDUSTRIES FOR MISSISSIPPI, BOLIVAR AND WASHINGTON COUNTIES,  
1965-1970  
(figures in thousands of employees)

	1965	1966	1967	1968	1969	1970	% Change 1965-1970
Mississippi							
Nonmanufacturing Employment, Total	332.6	353.1	364.9	372.7	385.7	395.5	19%
Mining	5.9	5.7	5.7	6.0	5.9	6.5	10%
Contract construction	28.8	31.0	30.9	29.3	32.1	32.5	13%
Transportation, public utilities	26.8	27.1	27.8	28.5	29.6	29.9	12%
Wholesale and retail trade	92.7	97.1	99.0	100.8	104.0	106.3	15%
Finance, insurance and real estate	16.9	17.6	18.6	19.3	20.1	21.1	25%
Service and miscellaneous	56.4	60.2	62.4	63.7	65.9	68.1	21%
Government	105.2	114.3	120.5	125.1	128.0	131.1	25%
Bolivar County							
Nonmanufacturing Employment, Total	4.6	4.8	5.8	6.5	6.7	7.0	53%
Wholesale and retail trade	1.6	1.6	1.7	1.8	1.8	1.8	15%
Service and miscellaneous	.7	.7	1.3	1.5	1.5	1.6	147%
Government	1.5	1.7	2.0	2.4	2.5	2.7	77%
Other	.8	.8	.9	.9	.9	.9	6%
Washington County							
Nonmanufacturing Employment, Total	11.5	11.5	12.3	12.3	12.8	13.8	20%
Wholesale and retail trade	3.6	3.7	3.7	3.7	3.9	4.0	10%
Service and miscellaneous	1.8	1.9	2.2	2.2	2.3	2.9	63%
Government	3.0	3.0	3.3	3.2	3.3	3.5	17%
Other	3.1	3.0	3.1	3.1	3.3	3.4	9%

Source: Regional Economics Information System, Bureau of Economic Analysis

## Personal Income in Bolivar and Washington Counties

### Personal Income by Major Sources

Data on personal income classified by wage and salary income, proprietors' income, property income and transfer payments are available for Bolivar and Washington Counties for the 1965 to 1969 period. Data also available for the State of Mississippi are useful for comparison.

Changes in total income and per capita income between 1965 and 1969 for Bolivar and Washington Counties and for the State of Mississippi are presented in Tables IV-D-5 and IV-D-6. Per capita income for Washington County is above per capita income for the state and is increasing at the same rate as the state. See Table IV-D-6. Per capita income for Bolivar County, however, is below per capita income for the state and is increasing more slowly than the state rate. This indicates a deterioration of income status for Bolivar County relative to the state. The rise in per capita income in Bolivar and Washington, as already noted, is partly a function of population declines in both counties.

Over the five year span studied, distinctive changes are apparent in the data. The proportion of total personal income accounted for by wage and salary disbursements is increasing while the proportion accounted for by proprietors income is decreasing. Moreover, these proportions for both counties and for the state in general are rapidly converging within each category. The changes taking place are sharpest for Bolivar County which is converging on the state averages from a relationship of greater divergence than Washington County. These relationships are illustrated in Tables IV-D-7 through IV-D-12, and in Figure IV-D-1.

In 1969 and 1970, some particularly typical conditions and events occurred - bad weather, wide price fluctuation in cotton - markedly affecting agricultural activities and income. For this reason, the trends from 1965 to 1969 are shown in one set of tables and the data for 1969 and 1970 in separate tables. For example, total personal income in Bolivar County jumped in the 1969-1970 comparison, more than in the 1965-1969 period. Most of this was attributable to a reversal (improvement) in farm proprietors' income. Washington County also experienced an improvement in farm proprietors' income in the same time period. See Tables IV-D-13 and IV-D-14.

### Farm and Nonfarm Earnings

In Bolivar County, nonfarm earnings have sharply increased in the 1965-1969 period, just as in the same period farm earnings have sharply declined. A similar pattern has occurred in Washington County, except the drop in farm earnings was not quite as severe as in Bolivar. Farm earnings in the State of Mississippi on the whole were relatively stable. See Table IV-D-15.

The earnings of the nonfarm sector in Bolivar County have risen from 50 percent of total earnings in 1965 to over 70 percent in 1969; correspondingly the proportion of total earnings accounted for by farm earnings has fallen from 50 percent in 1965 to 29 percent in 1969. In Washington County,



TABLE IV-D-5

Total Personal Income for Mississippi, Bolivar and Washington Counties,  
1965 and 1969.

	<u>1965</u>	<u>1969</u>	<u>% Change 1965-1969</u>
Mississippi	3,725,807	5,194,149	39%
Bolivar	80,871	89,245	10%
Washington	136,201	179,695	32%

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Source: Regional Economics Information System, Bureau of Economic Analysis

TABLE IV-D-6

Personal Income Per Capita for Mississippi, Bolivar and Washington Counties,  
1965 and 1969.

	1965	1969	% Increase 1965-1969
Mississippi	1,599	2,227	39%
Bolivar	1,386	1,696	22%
Washington	1,720	2,391	39%

---

Source: Regional Economics Information System, Bureau of Economic Analysis

TABLE IV-D-7  
PERSONAL INCOME BY MAJOR SOURCES, MISSISSIPPI, 1965-1969  
(Thousands of Dollars)

Mississippi	1965	1966	1967	1968	1969	% Change from 1967-1970
Total Personal Income	3,725,807	4,123,264	4,420,225	4,842,816	5,194,149	39%
Total Wage and Salary Disbursements	2,221,171	2,489,485	2,657,538	2,976,319	3,253,442	46%
Other Labor Income	100,765	115,674	129,880	137,961	156,483	55%
Proprietors Income	694,668	748,033	780,461	800,135	788,263	13%
Farm Proprietors Income	377,112	421,140	426,085	431,610	410,510	9%
Nonfarm Proprietors Income	317,556	326,893	354,376	368,525	377,753	19%
Property Income	436,625	472,517	518,983	549,908	594,107	36%
Transfer Payments	352,116	405,329	457,299	519,273	568,307	61%
Less Personal Contributions for Social Insurance	-79,538	-107,774	-123,936	-140,780	-166,453	

SOURCE: Regional Economics Information System, Bureau of Economic Analysis

TABLE IV-D-8  
PERSONAL INCOME BY MAJOR SOURCES, MISSISSIPPI, 1965-1969  
(Percent of Total Personal Income)

Mississippi	1965	1966	1967	1968	1969
Total Personal Income	100.00	100.00	100.00	100.00	100.00
Total Wage and Salary Disbursements	59.62	60.38	60.12	61.46	62.64
Other Labor Income	2.70	2.81	2.94	2.85	3.01
Proprietors Income	18.64	18.14	17.66	16.52	15.18
Farm Proprietors Income	10.12	10.21	9.64	8.91	7.90
Nonfarm Proprietors Income	8.52	7.93	8.02	7.61	7.27
Property Income	11.72	11.46	11.74	11.36	11.44
Transfer Payments	9.45	9.83	10.35	10.72	10.94
Less at Personal Contributions for Social Insurance	-2.13	-2.61	-2.80	-2.91	-3.20

SOURCE: Regional Economics Information System, Bureau of Economic Analysis

TABLE IV-D-9  
PERSONAL INCOME BY MAJOR SOURCES, BOLIVAR COUNTY, 1965-1969  
(Thousands of Dollars)

Bolivar County, Mississippi	1965	1966	1967	1968	1969	% Change from 1967-1969
Total Personal Income	80,871	82,865	88,258	89,130	89,245	10%
Total Wage and Salary Disbursements	32,613	34,936	38,158	42,785	46,211	42%
Other Labor Income	1,643	1,876	2,198	2,299	2,562	56%
Proprietors Income	35,179	33,151	32,006	26,899	22,380	-36%
Farm Proprietors Income	28,975	26,740	25,116	19,885	15,216	-47%
Nonfarm Proprietors Income	6,204	6,411	6,890	7,014	7,164	-15%
Property Income	5,588	6,295	7,892	8,289	8,880	59%
Transfer Payments	6,913	8,039	9,902	10,984	11,736	70%
Less Personal Contributions for Social Insurance	-1,065	-1,432	-1,898	-2,126	-2,524	

SOURCE: Regional Economics Information System, Bureau of Economic Analysis



TABLE IV-D-10  
PERSONAL INCOME BY MAJOR SOURCES, BOLIVAR COUNTY, 1965-1969  
(Percent of Total Personal Income)

Bolivar County, Mississippi	1965	1966	1967	1968	1969
Personal Income	100.00	100.00	100.00	100.00	100.00
Total Wage and Salary Disbursements	40.33	42.16	43.23	48.00	51.78
Other Labor Income	2.03	2.26	2.49	2.58	2.87
Proprietors Income	43.50	40.01	36.26	30.18	25.08
Farm Proprietors Income	35.83	32.27	28.46	22.31	17.05
Nonfarm Proprietors Income	7.67	7.74	7.81	7.87	8.03
Property Income	6.91	7.60	8.94	9.30	9.95
Transfer Payments	8.55	9.70	11.22	12.32	13.15
Less Personal Contributions for Social Insurance	-1.32	-1.73	-2.15	-2.39	-2.83

SOURCE: Regional Economics Information System, Bureau of Economic Analysis

TABLE IV-D-11  
PERSONAL INCOME BY MAJOR SOURCES, WASHINGTON COUNTY, 1965-1969  
(Thousands of Dollars)

Washington County, Mississippi	1965	1966	1967	1968	1969	% Change from 1967-1969
Total Personal Income	136,201	145,581	154,976	165,992	179,695	32%
Total Wage and Salary Disbursements	76,725	84,220	89,554	101,755	112,365	46%
Other Labor Income	3,289	3,742	4,209	4,392	5,257	60%
Proprietors Income	33,031	33,022	33,811	30,187	31,141	-6%
Farm Proprietors Income	18,696	18,338	17,825	13,454	14,148	-24%
Nonfarm Proprietors Income	14,335	14,684	15,986	16,733	16,993	19%
Property Income	15,132	16,110	17,772	18,927	20,124	33%
Transfer Payments	10,870	12,306	14,097	15,868	16,952	56%
Less Personal Contributions for Social Insurance	-2,846	-3,819	-4,467	-5,137	-6,144	

SOURCE: Regional Economic Information System, Bureau of Economic Analysis

TABLE IV-D-12  
 PERSONAL INCOME BY MAJOR SOURCES, WASHINGTON COUNTY, 1965-1969  
 (Percent of Total Personal Income)

Washington County, Mississippi	1965	1966	1967	1968	1969
Total Personal Income	100.00	100.00	100.00	100.00	100.00
Total Wage and Salary Disbursements	56.33	57.85	57.79	61.30	62.53
Other Labor Income	2.41	2.57	2.72	2.65	2.93
Proprietors Income	24.25	22.68	21.82	18.19	17.33
Farm Proprietors Income	13.73	12.60	11.50	8.11	7.87
Nonfarm Proprietors Income	10.52	10.09	10.32	10.08	9.46
Property Income	11.11	11.07	11.47	11.40	11.20
Transfer Payments	7.98	8.45	9.10	9.56	9.43
Less - Personal Contributions for Social Insurance	-2.09	-2.62	-2.88	-3.09	-3.42

SOURCE: Regional Economics Information System, Bureau of Economic Analysis

TABLE IV-D-13  
TOTAL PERSONAL INCOME,  
BOLIVAR AND WASHINGTON COUNTIES, 1969-1970  
(Thousands of Dollars)

	1969	1970	Percent change 1969-1970
Bolivar County	89,245	110,362	25%
Washington County	179,695	200,447	12%

TABLE IV-D-14  
TOTAL WAGE AND SALARY DISBURSEMENTS  
AND FARM PROPRIETORS INCOME  
BOLIVAR AND WASHINGTON COUNTIES, 1969-1970

	1969	1970	Percent change 1969-1970
Bolivar County			
Total wages and salaries	42,211	50,456	9%
Farm proprietors income	15,216	26,970	77%
Washington County			
Total wages and salaries	112,365	117,995	5%
Farm proprietors income	14,148	22,573	60%

SOURCE: Regional Economics Information System, Bureau of Economic Analysis

TABLE IV-D-15  
TOTAL EARNINGS, FARM AND NONFARM EARNINGS,  
MISSISSIPPI, BOLIVAR AND WASHINGTON COUNTIES, 1965-1969  
(Thousands of Dollars)

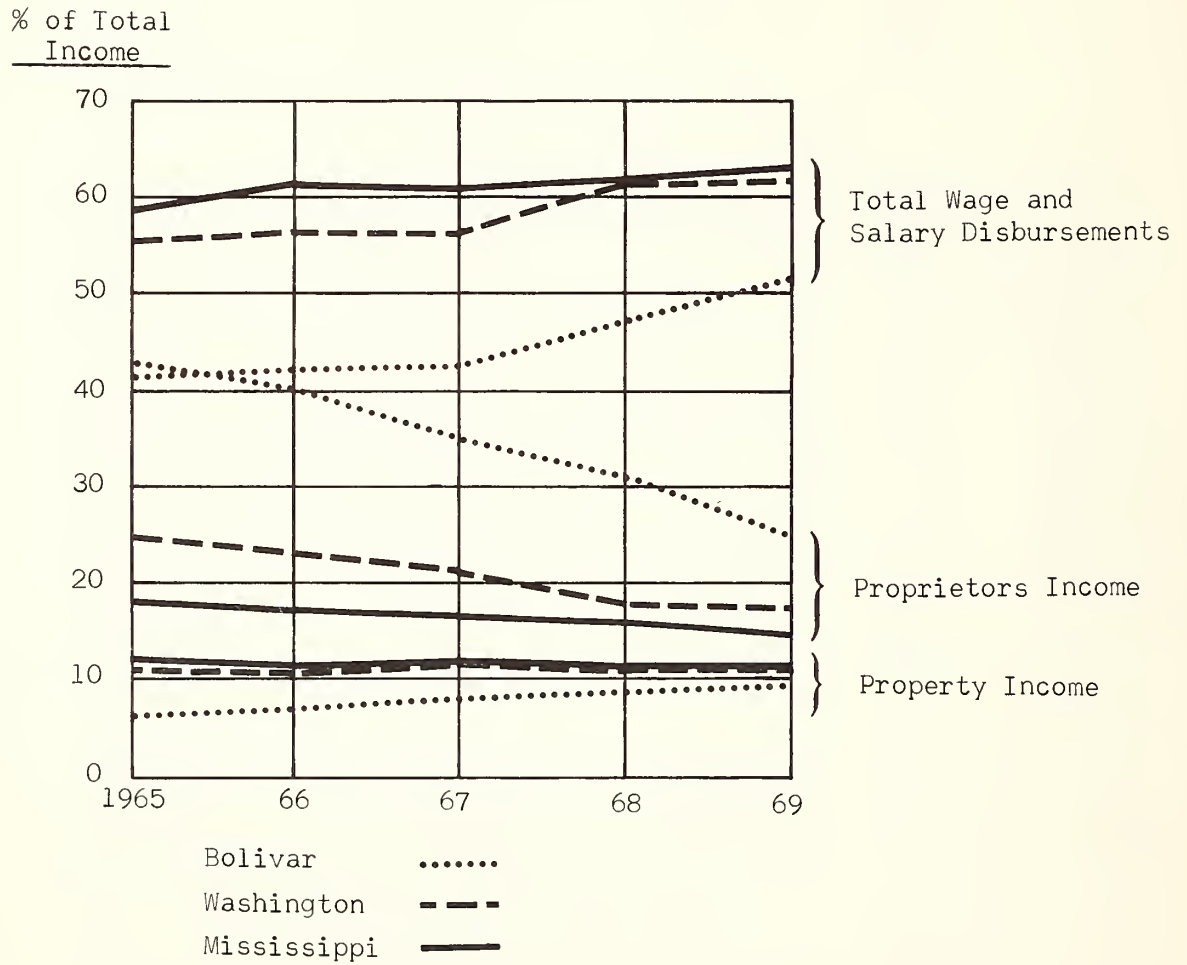
	1965	1966	1967	1968	1969	% Change from 1965 to 1969
<b>Bolivar County</b>						
Total Earnings	69,435	69,963	72,362	71,983	71,153	3%
Farm Earnings	34,769	31,861	29,716	25,029	20,425	-41
Nonfarm Earnings	34,666	38,102	42,646	46,954	50,728	46
<b>Washington County</b>						
Total Earnings	113,045	120,984	127,574	136,334	148,763	32
Farm Earnings	22,944	22,095	21,198	17,225	17,967	-22
Nonfarm Earnings	90,101	98,889	106,376	119,109	130,796	45
<b>Mississippi</b>						
Total Earnings	3,016,604	3,353,192	3,567,879	3,914,415	4,198,188	39
Farm Earnings	435,926	473,162	472,799	483,852	463,427	6
Nonfarm Earnings	2,580,678	2,880,030	3,095,080	3,430,563	3,734,761	45

\*Total earnings pertain to that portion of total personal income attributable to total wage and salary disbursements, other labor income, and proprietors income. It excludes property income and transfer payments.



Figure IV-D-1

Trends in Wages, Proprietors Income and Property Income for Mississippi, Bolivar and Washington Counties, 1965-1969



while farm earnings represented a smaller part of the economic activity (20 percent) in 1965, such earnings continued to decline to a new low of 12 percent in 1969 approximating the level for the State. See Table IV-D-16 and Figure IV-D-2.

Farm earnings composed proportionately more of total earnings in both Bolivar and Washington Counties in 1970 than was the case in several prior years (1968, 1969). See Table IV-D-17. Farm earnings increased very sharply comparing 1969 and 1970 figures for both Counties. See Table IV-D-18.

#### Analysis of nonfarm earnings.-

In Bolivar County, the diversification of the economy has taken place in a number of nonfarm activities: government (particularly state and local); manufacturing; services, wholesale and retail activities, among others. See Table IV-D-20. The major advance has been in manufacturing in Bolivar County; manufacturing accounted for 22 percent of nonfarm earnings in 1965 and grew to 27 percent of nonfarm earnings in 1969. The proportion of nonfarm earnings accounted for by wholesale and retail activities dropped from 27 percent in 1965 to 23 percent in 1969. The proportionate shows of nonfarm earnings accounted for by other industrial and business sectors were stable in the 1965 to 1969 period.

In 1969 as in 1965, eighty percent of nonfarm earnings in Bolivar County were accounted for by the state and local government (15 percent in 1969 and in 1965); manufacturing (27 percent in 1969 and 22 percent in 1965); wholesale and retail (23 percent in 1969 and 27 percent in 1965); and services (15 percent in 1969 and in 1965). See Table IV-D-20.

In Washington County, a shift occurred in total nonfarm earnings accounted for by the manufacturing sector. This sector accounted for 25 percent of the total nonfarm earnings in 1969, increasing from 22 percent of the 1965 total nonfarm earnings. Wholesale and retail earnings accounted for 18 percent of total nonfarm earnings in 1969, dropping off from the 21 percent figure recorded in 1965. The economic base in Washington County may be broader than Bolivar wherein the transportation, communications and public utilities sector accounts for 12 percent of nonfarm earnings in 1969. This sector along with the manufacturing (25 percent) and wholesale and retail (18 percent), services (16 percent), and state and local government sectors (12 percent) account for 83 percent of nonfarm earnings in 1969. See Table IV-D-22.

The pattern of nonfarm earnings in 1969 apportioned by the industrial sector in Bolivar and Washington Counties more nearly approximates the State pattern. See Tables IV-D-20, IV-D-22, and IV-D-24.

While farm earnings were sharply changing (upward) in Bolivar and Washington Counties in the 1969-1970 period, if anything, nonfarm earnings showed a declining rate of growth in the same time period. See Tables IV-D-25 through IV-D-28 inclusive.

Figure IV-D-2

Farm and Nonfarm Earnings as Proportions of Total Personal Income for  
Mississippi, Bolivar and Washington Counties,  
1965-1969

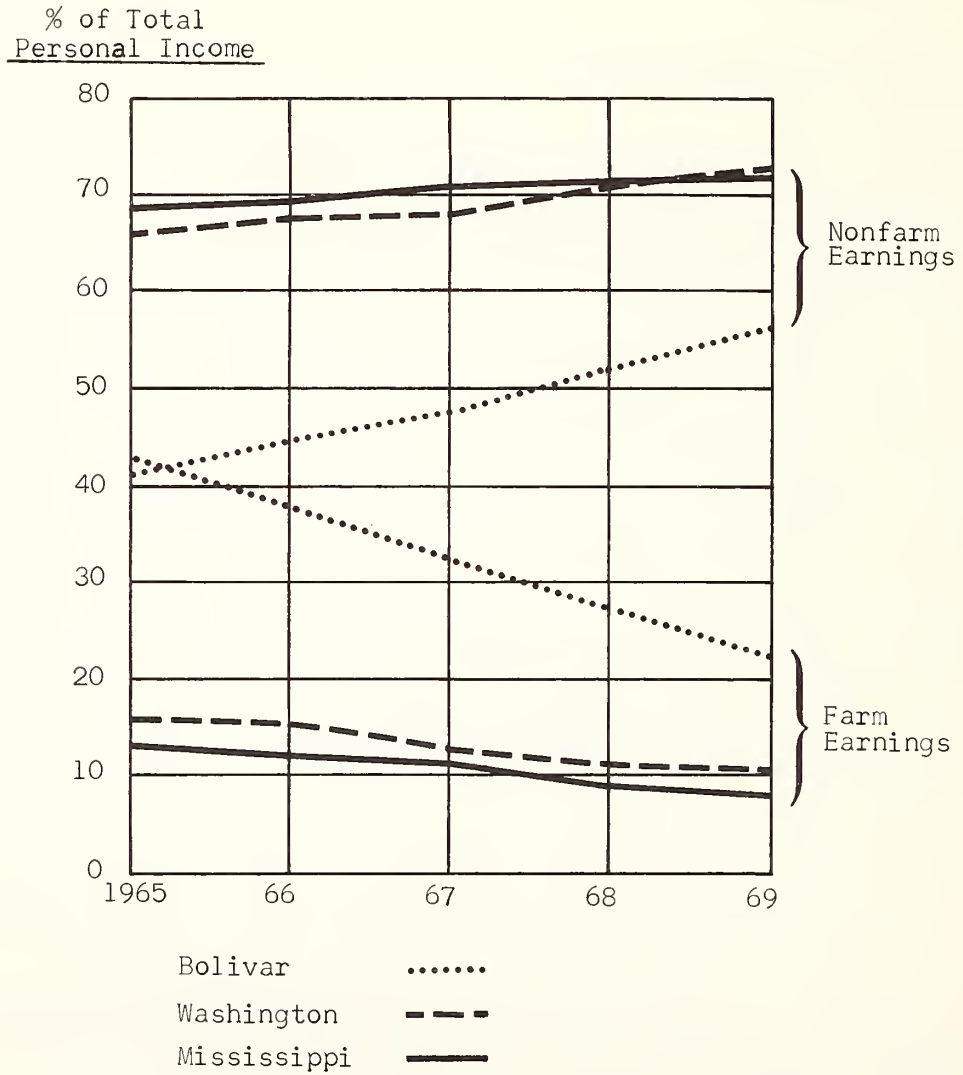


TABLE IV-D-16  
RATIOS OF FARM EARNINGS AND NONFARM EARNINGS TO TOTAL EARNINGS\*  
MISSISSIPPI, BOLIVAR AND WASHINGTON COUNTIES, 1965-1969

	P E R C E N T				
	1965	1966	1967	1968	1969
Bolivar County					
Farm Earnings/Total Earnings	50.1	45.5	41.1	34.8	28.7
Nonfarm Earnings/Total Earnings	49.9	54.5	58.9	65.2	71.3
Washington County					
Farm Earnings/Total Earnings	20.3	18.3	16.6	12.6	12.1
Nonfarm Earnings/Total Earnings	79.7	81.7	83.4	87.4	87.9
Mississippi					
Farm Earnings/Total Earnings	14.5	14.1	13.3	12.4	11.0
Nonfarm Earnings/Total Earnings	85.5	85.9	86.7	87.6	89.0

\* Total earnings pertain to that portion of total personal income attributable to total wage and salary disbursements, other labor income, and proprietors income. It excludes property income and transfer payments.

TABLE IV-D-17  
RATIOS OF FARM EARNINGS AND NONFARM EARNINGS  
TO TOTAL EARNINGS  
BOLIVAR AND WASHINGTON COUNTIES 1969-1970  
(Percent)

	Percent	
	1969	1970
Bolivar County		
Farm earnings/total earnings	28.7	37.6
Nonfarm earnings/total earnings	71.3	62.4
Washington County		
Farm earnings/total earnings	12.1	16.5
Nonfarm earnings/total earnings	87.9	83.5

SOURCE: Regional Economics Information System, Bureau of Economic Analysis



TABLE IV-D-18  
TOTAL EARNINGS, FARM AND NONFARM EARNINGS,  
BOLIVAR AND WASHINGTON COUNTIES 1969-1970  
(Thousands of Dollars)

	1969	1970	Percent change 1969 to 1970
Bolivar County			
Total earnings	71,153	87,708	23%
Farm earnings	20,425	32,960	61%
Nonfarm earnings	50,728	54,748	8%
Washington County			
Total earnings	148,763	163,237	10%
Farm earnings	17,967	26,970	50%
Nonfarm earnings	130,796	136,267	4%

SOURCE: Regional Economics Information System, Bureau of Economic Analysis

TABLE IV-D-19

SUBCATEGORIES OF TOTAL NONFARM EARNINGS BY  
BY BOLIVAR COUNTY, 1965-1969  
(Thousands of Dollars)

	1965	1966	1967	1968	1969	% Change from 1965 to 1969
Total Nonfarm Earnings	34,666	38,102	42,646	46,954	50,728	46%
Government Earnings	6,620	7,316	8,115	9,171	9,572	45
Total Federal	1,449	1,594	1,670	1,741	1,832	26
Civilian	873	899	951	1,022	1,037	19
Military	576	695	719	719	795	38
State and Local	5,171	5,722	6,445	7,430	7,740	50
Private Nonfarm Earnings	28,046	30,786	34,531	37,783	41,156	47
Manufacturing	7,770	8,974	11,128	12,262	13,898	79
Wholesale and Retail	9,355	10,083	10,724	11,316	11,727	25
Services	5,076	5,409	6,227	7,146	7,751	53
Contract Construction	1,609	1,791	1,688	2,005	2,485	54
Trans., Comm. & Public Utilities	2,777	2,956	3,112	3,245	3,423	23
Finance, Insur. & Real Estate	1,108	1,208	1,236	1,377	1,422	28
Mining and Other	351	365	416	432	450	28

SOURCE: Regional Economics Information System, Bureau of Economic Analysis

TABLE IV-D-20  
PROPORTION OF TOTAL NONFARM EARNINGS BY  
SUBCATEGORY, BOLIVAR COUNTY, 1965-1969  
(Percent)

	P E R C E N T				
	1965	1966	1967	1968	1969
Total Nonfarm Earnings	100	100	100	100	100
Government Earnings	19	19	19	20	19
Total Federal	4	4	4	4	4
Civilian	2	2	2	2	2
Military	2	2	2	2	2
State and Local	15	15	15	16	15
Private Nonfarm Earnings	81	81	81	80	81
Manufacturing	22	24	26	26	27
Wholesale and Retail	27	27	25	24	23
Services	15	14	15	15	15
Contract Construction	5	5	4	4	5
Trans.Comm.& Public Utilities	8	8	7	7	7
Finance, Insur.& Real Estate	3	3	3	3	3
Mining and Other	1	1	1	1	1

SOURCE: Regional Economic Information System, Bureau of Economic Analysis

TABLE IV-D-21  
SUBCATEGORIES OF TOTAL NONFARM EARNINGS BY  
WASHINGTON COUNTY, 1965-1969  
(Thousands of Dollars)

	1965	1966	1967	1968	1969	% Change from 1965-1969
Total Nonfarm Earnings	90,101	98,889	106,376	119,109	130,796	45%
Government Earnings	15,246	16,788	18,131	21,622	22,181	46
Total Federal	5,237	5,651	5,753	6,675	6,889	32
Civilian	4,530	4,784	4,877	5,133	5,565	23
Military	707	867	876	1,542	1,324	87
State and Local	10,009	11,137	12,378	14,947	15,292	53
Private Nonfarm Earnings	74,855	82,101	88,245	97,487	108,615	45
Manufacturing	20,152	23,225	25,133	28,830	32,610	62
Wholesale and Retail	19,129	20,688	21,023	22,271	23,993	25
Services	15,223	16,125	17,758	19,583	21,197	39
Contract Construction	(D)	(D)	(D)	7,227	8,718	--
Trans., Comm. & Public Utilities	10,157	10,859	11,970	13,397	15,570	53
Finance, Insur. & Real Estate	4,038	4,376	4,810	(D)	(D)	--
Mining and Other	(D)	(D)	(D)	(D)	(D)	--

(D) - Data withheld to avoid disclosure.

SOURCE: Regional Economics Information System, Bureau of Economic Analysis

TABLE IV-D-22  
PROPORTION OF TOTAL NONFARM EARNINGS BY  
SUBCATEGORY, WASHINGTON COUNTY, 1965-1969

	P E R C E N T				
	1965	1966	1967	1968	1969
Total Nonfarm Earnings	100	100	100	100	100
Government Earnings	17	17	17	18	17
Total Federal	6	6	5	6	5
Civilian	5	5	4	4	4
Military	1	1	1	1	1
State and Local	11	11	12	12	12
Private Nonfarm Earnings	83	83	83	82	83
Manufacturing	22	23	24	24	25
Wholesale and Retail	21	21	20	19	18
Services	17	16	17	16	16
Contract Construction	--	--	--	6	7
Trans., Comm. & Public Utilities	11	11	11	11	12
Finance, Insur. & Real Estate	4	4	5	--	--
Mining and Other	--	--	--	--	--

SOURCE: Regional Economics Information System, Bureau of Economic Analysis



TABLE IV-D-23  
SUBCATEGORIES OF TOTAL NONFARM EARNINGS,  
MISSISSIPPI, 1965-1969  
(Thousands of Dollars)

	1965	1966	1967	1968	1969	% Change from 1965 to 1969
Total Nonfarm Earnings	2,580,678	2,880,030	3,095,080	3,430,563	3,734,761	45%
Government Earnings	542,729	625,864	665,084	766,533	823,947	52
Total Federal	255,022	311,163	312,611	348,310	397,057	56
Civilian	129,704	143,877	148,602	162,501	177,596	37
Military	125,318	167,286	164,009	185,809	219,461	75
State and Local	287,707	314,701	352,473	418,223	426,890	48
Private Nonfarm Earnings	2,037,949	2,254,166	2,429,996	2,664,030	2,910,814	43
Manufacturing	705,880	814,843	875,414	999,102	1,087,006	54
Wholesale and Retail	454,926	492,234	525,294	565,200	607,986	37
Services	363,160	388,277	429,987	474,398	514,416	42
Contract Construction	179,547	202,652	213,262	202,824	238,011	33
Trans., Comm. & Public Utilities	169,813	180,218	193,663	210,161	235,155	39
Finance, Insur. & Real Estate	107,981	118,065	131,862	148,651	159,428	48
Mining and Other	56,642	57,877	60,514	63,694	68,812	22

SOURCE: Regional Economics Information System, Bureau of Economics Analysis

TABLE IV-D-24  
PROPORTION OF TOTAL NONFARM EARNINGS BY  
SUBCATEGORY, MISSISSIPPI, 1965-1969

	P E R C E N T				
	1965	1966	1967	1968	1969
Total Nonfarm Earnings	100	100	100	100	100
Government Earnings	21	22	22	22	22
Total Federal	10	11	10	10	11
Civilian	5	5	5	5	5
Military	5	6	5	5	6
State and Local	11	11	11	12	11
Private Nonfarm Earnings	79	78	78	78	78
Manufacturing	35	28	28	29	29
Wholesale and Retail Services	22	17	17	16	16
Contract Construction	18	13	14	14	14
Trans., Comm. & Public Utilities	9	7	7	6	6
Finance, Insur. & Real Estate	8	6	6	6	6
Mining and Other	5	4	4	4	4
	3	2	2	2	2

SOURCE: Regional Economics Information System, Bureau of Economics Analysis

TABLE IV-D-25  
 SUBCATEGORIES OF TOTAL NONFARM EARNINGS,  
 BOLIVAR COUNTY, 1969-1970  
 (Thousands of Dollars)

	1969	1970
Total Nonfarm Earnings	<u>50,728</u>	<u>54,748</u>
Government Earnings	<u>9,572</u>	<u>10,747</u>
Total Federal	1,832	1,850
Civilian	1,037	980
Military	795	870
State and local	7,740	8,897
Private Nonfarm Earnings	<u>41,156</u>	<u>44,001</u>
Manufacturing	13,898	15,576
Wholesale and Retail	11,727	11,882
Services	7,751	8,489
Contract construction	2,485	2,426
Trans., comm. & pub. util.	3,423	3,758
Fin., insur., & real estate	1,422	(D)
Mining and other	450	(D)

SOURCE: Regional Economics Information System, Bureau of Economic Analysis

TABLE IV-D-26  
 PROPORTION OF TOTAL NONFARM EARNINGS BY  
 SUBCATEGORY, BOLIVAR COUNTY, 1969-1970  
 (Percent)

	1969	1970
Total Nonfarm Earnings	<u>100</u>	<u>100</u>
Government Earnings	<u>19</u>	<u>20</u>
Total Federal	4	3
Civilian	2	2
Military	2	1
State and local	15	16
Private Nonfarm Earnings	<u>81</u>	<u>80</u>
Manufacturing	27	28
Wholesale and retail	23	22
Services	15	15
Contract construction	5	4
Trans., comm. and pub. util.	7	7
Finance, insur., and real estate	3	(D)
Mining and other	1	(D)

SOURCE: Regional Economics Information System, Bureau of Economic Analysis

TABLE IV-D-27  
 SUBCATEGORIES OF TOTAL NONFARM EARNINGS,  
 WASHINGTON COUNTY, 1969-1970  
 (Thousands of dollars)

	1969	1970
Total Nonfarm Earnings	<u>130,796</u>	<u>136,267</u>
Government Earnings	22,181	24,953
Total Federal	6,889	7,851
Civilian	5,565	6,363
Military	1,324	1,488
State and local	15,292	17,102
Private Nonfarm Earnings	<u>108,615</u>	<u>111,314</u>
Manufacturing	32,610	33,153
Wholesale and retail	23,993	25,032
Services	21,197	22,452
Contract construction	8,718	8,538
Trans., comm. and pub. util.	15,570	15,625
Finance, insur. and real estate	(D)	(D)
Mining and other	(D)	(D)

SOURCE: Regional Economics Information System, Bureau of Economic Analysis



TABLE IV-D-28  
 PROPORTIONAL TOTAL NONFARM EARNINGS, BY  
 SUBCATEGORY, WASHINGTON COUNTY, 1969-1970  
 (Percent)

	1969	1970
Total Nonfarm Earnings	<u>100</u>	<u>100</u>
Government earnings	<u>17</u>	<u>18</u>
Total Federal	5	6
Civilian	4	5
Military	1	1
State and local	12	12
Private Nonfarm Earnings	<u>83</u>	<u>82</u>
Manufacturing	25	24
Wholesale and retail	18	18
Services	16	16
Contract construction	7	6
Trans., comm. and pub. util.	12	11
Finance, insur., and real estate	(D)	(D)
Mining and other	(D)	(D)

SOURCE: Regional Economics Information System, Bureau of Economic Analysis

## Agriculture

Agriculture may be characterized as a major economic force in Bolivar County and a substantial one in Washington County. Although agricultural productivity and sales show a significant downward trend in the 1964 to 1970 period, agriculture activity remains a primary factor shaping the local economy and the culture of the communities in Bolivar and Washington Counties, particularly in Bolivar. As extensive changes occur in the income from agricultural productivity or modes of agricultural operation, these alterations will affect the socio-economic characteristics and culture of the persons residing in the surrounding area.

Since World War II the general trend in Agriculture in the United States has been one of fewer farms operating on larger acreages. The statistics presented here for Bolivar and Washington Counties evidence this trend. As shown in Table IV-D-29, the number of farms in Bolivar County declined from 1657 in 1964 to 1070 in 1969. The number of farms in Washington County decreased from 795 in 1964 to 652 in 1969. The average size of a farm in Bolivar County increased from 289.6 acres in 1964 to 459.5 acres in 1969. The average acreage per farm in Washington County was 484.2 acres in 1964 as compared to 581.1 acres in 1969.

However, the land area in both counties used for agricultural activity showed no significant change, indicating no diversion of acreage within either county for economic activities other than agricultural ones. The decrease in the number of small farms between 1964 and 1969 was most apparent in Bolivar County where farm operations with one to fifty acres declined from 851 in 1964 to 331 in 1969. The acreage in these small farms appears to have been assimilated by the farms with 2,000 or more acres. In Bolivar County the 2,000+ acre farms increased in number from 31 in 1964 to 41 in 1969, with a gain in acreage of approximately 60,000 acres.

The average dollar value per farm showed a sizeable increase from 1964 to 1969 in both counties. Bolivar reported \$180,855 per farm in 1969 and \$83,276 in 1964. The value of an average farm in Washington was \$235,710 in 1969 and \$141,035 in 1964. This considerable increase is due both to the increase in the average size of the farms and to the increased dollar value of the acreage itself. On the average, an acre of land in Bolivar County sold for \$287 in 1964 and \$393 in 1969. In Washington County, the average value of an acre of land was \$290 in 1964 as compared with \$405 in 1969. This increase in land value is probably not significant in that the increase is not out of line with the trend of rising land values throughout the country.

The number of farm operators in Bolivar and Washington Counties decreased in the same proportion as the number of farms. See Table IV-D-30. Of the three classifications of farm operators, (i.e., full owner, part owner and tenants), part owners and full owners showed a slight increase in Bolivar County. There were 441 full owner-operators in 1964 in Bolivar County and 467 in 1969. One hundred ninety two of the full owners in 1964 were black as compared to 233 blacks in this category in 1969. In 1964, Bolivar County had 367 part owners; 83 of these were black. The total number of part owners increased to 382 in 1969, but black part owners declined to 77. Washington County showed negligible decreases in every part or full owner category from 1964 to 1969, except for black full owners, which increased from 118 in 1964 to 125 in 1969.

TABLE IV-D-29

FARMS, LAND IN FARMS AND DOLLAR VALUE OF FARM ACREAGE IN  
BOLIVAR AND WASHINGTON COUNTIES

1964 and 1969

	1964	1969	Percent change from 1964-1969
Number of farms:			
Bolivar	1657	1070	-35%
Washington	795	653	-18%
Average size of farms (acres):			
Bolivar	289.6	459.5	+59%
Washington	484.2	581.1	+20%
Percent of land in county in farms:			
Bolivar	81.7	83.3	+ 2%
Washington	82.6	80.8	- 2%
Average value per farm (dollars):			
Bolivar	\$ 83,276	\$180,855	+117%
Washington	141,035	235,710	+67%
Average value per acre (dollars):			
Bolivar	287	393	+37%
Washington	290	405	+40%

SOURCE: 1969 Census of Agriculture

TABLE IV-D-30  
CHARACTERISTICS OF FARM OPERATORS IN  
BOLIVAR AND WASHINGTON COUNTIES  
1964 and 1969

	1964	1969	Percent Change from 1964-1969
Total number of farm operators:			
Bolivar	1657	1070	-35%
Washington	795	653	-18%
Total number of black farm operators:			
Bolivar	878	387	-56%
Washington	322	212	-34%
Full owners:			
Bolivar	441	467	+ 6%
Washington	305	286	- 6%
Full owners (black):			
Bolivar	192	233	+21%
Washington	118	125	+ 6%
Part owners:			
Bolivar	367	382	+ 4%
Washington	242	230	- 4%
Part owners (black):			
Bolivar	83	77	- 7%
Washington	53	48	- 9%
Tenants (including sharecroppers):			
Bolivar	812	221	-73%
Washington	242	137	-43%
Black Tenants (including sharecroppers:			
Bolivar	603	77	-87%
Washington	151	39	-74%
Percent of farms operated by tenants:			
Bolivar	49.0	20.6	-58%
Washington	30.4	20.9	-31%
Percent of farms operated by black tenants:			
Bolivar	68.7	19.8	-71%
Washington	46.9	18.3	-61%

SOURCE: 1969 Census of Agriculture

Tenant farmer, including sharecroppers, displayed the greatest reduction in number in all farm operator categories between 1964 and 1969. There were 812 tenant farmers in Bolivar County in 1964 and 221 tenant farmers in 1969. Six hundred and three of the 1964 tenant farmers in Bolivar County were black; in 1969, 77 were black. The percent of tenancy or percent of farms operated by tenant farmers in Bolivar County dropped from 49 percent in 1964 to 20.6 percent in 1969. The percent of tenancy for blacks went from 68.7 percent in 1964 to 19.8 percent in 1969. The reduction in the number of tenant farmers was not so significant in Washington County, partially due to a much smaller number of tenant farmers reported in 1964. The total number of tenants for Washington County in 1964 was 242; 151 were black. In 1969, there were 137 tenants; 39 were black. The percent of farm operated by tenants in Washington was 30.4 percent in 1964 and 20.9 percent in 1969. The percent of black tenant farmers fell from 46.9 percent in 1964 to 18.3 percent in 1969.

### Agricultural Productivity

Table IV-D-31 lists agriculture production in the appropriate units for the four major cash crops in Bolivar and Washington Counties for the years 1965 through 1970 inclusive. Also listed are the numbers of cattle and hogs on hand in the counties for the same time period. Production of wheat in both counties shows some fluctuation during the six-year period; however, this fluctuation is not particularly significant in relation to farm income. Fluctuation of wheat production in both Bolivar and Washington Counties is primarily due to changes in allotments granted by the Agriculture Stabilization and Conservation Service on a yearly basis. Therefore, an increase in wheat production during 1966 through 1968 can be attributed to more acres planted and harvested. Rice production was generally stable during the same time period. Rice acreages planted in the two counties varied little during 1965-1970, so any increases or decreases in production can be attributed to good or bad crop years. Production of Soybeans showed an increase, indicating a tendency of the area farmers to increase their acreage of soybeans as a cash crop. This move toward more soybean production has been the trend throughout Mississippi and other Southern States, due to lower prices for cotton and an increased demand for soybeans.

Cotton, though declining somewhat in importance in Bolivar and Washington Counties, was still the most meaningful indicator in agricultural production and the most important factor in agricultural sales during the time period from 1965-1970. Based on the data in Table IV-D-32, cotton accounted for 50 to 70 percent of the gross agricultural income in both Bolivar and Washington Counties in 1964 and 1969. With such a high percentage of the agricultural income for both counties dependent upon cotton production, the ill effects on the counties' economy of a bad cotton harvest are obvious.

### Agricultural Income

As shown in Table IV-D-32, Market Value of all agricultural products sold showed a marked decrease from 1964 to 1969. Gross sales fell from



TABLE IV-D-31  
 AGRICULTURAL PRODUCT PRODUCTION FOR  
 BOLIVAR AND WASHINGTON COUNTIES  
 1965-1970

	1965	1966	1967	1968	1969	1970	Percent change from 1965-1970
Cotton Production (bales):							
Bolivar	169,300	125,800	109,500	148,700	115,740	154,900	- 9%
Washington	145,300	103,800	100,300	134,900	113,041	137,500	- 5%
Wheat Production (bushels):							
Bolivar	727,900	1,029,000	1,800,000	1,444,000	283,800	353,500	-51%
Washington	556,200	829,500	1,363,000	1,218,200	527,000	665,000	+20%
Rice Production (100# bags):							
Bolivar	776,700	991,700	994,000	1,208,800	1,062,000	952,600	+23%
Washington	366,300	469,900	458,600	555,600	481,000	426,600	+16%
Soybean Production (bushels):							
Bolivar	3,586,000	3,995,000	4,185,000	4,806,000	3,600,000	4,575,000	+28%
Washington	2,538,000	2,937,500	3,096,000	3,132,000	2,667,000	3,432,000	+35%
<u>Livestock</u>							
Cattle in County:							
Bolivar	17,500	17,200	16,800	16,200	15,200	14,500	-17%
Washington	22,700	22,300	21,800	21,900	21,300	21,700	- 4%
Hogs and Pigs in County:							
Bolivar	6,300	6,300	7,400	8,000	7,500	8,000	+27%
Washington	2,400	2,500	2,800	2,700	2,600	3,200	+33%

SOURCE: Mississippi Crop and Livestock Reporting Service - Statistical Reporting Service, United States Department of Agriculture



TABLE IV-D-32

FARM INCOME AND SALES FOR  
BOLIVAR AND WASHINGTON COUNTIES  
1969 and 1964

	1969	1964	Percent change from 1964-1969
Market value of all agricultural products sold:			
Bolivar	\$30,217,329	\$46,347,500	-35%
Washington	25,059,538	33,261,500	-25%
Average sales per farm:			
Bolivar	28,240	27,971	+ 1%
Washington	38,376	41,839	- 8%
Cotton sales:			
Bolivar	14,221,105	32,680,918	-56%
Washington	13,219,477	23,339,178	-43%
Livestock sales:			
Bolivar	992,781	1,304,977	-24%
Washington	1,878,556	2,090,515	-10%

SOURCE: 1969 Census of Agriculture

\$46,347,500 in 1964 to \$30,217,329 in 1969 in Bolivar County and \$33,261,500 in 1964 to \$25,059,538 in 1969 in Washington County. Average sales per farm rose from \$27,971 in 1964 to \$28,240 in 1969 in Bolivar County and fell from \$41,839 in 1964 to \$38,376 in 1969 in Washington County. These negligible dollar value changes are particularly significant in view of the large increase in the size of an average farm for both counties between the same years. As would be expected, the major factor contributing to the decline in gross agricultural sales was the large decrease in cotton sales. The 1969 cotton harvest in both Bolivar and Washington Counties was adversely affected by a backlash of heavy rains from Hurricane Camille. Due to the abnormally heavy precipitation, the yield in Bolivar County declined from 200,395 bales in 1964 to 11,740 bales in 1969. In Washington County, the cotton yield decreased by 23 percent; 145,835 bales in 1964 and 113,041 bales in 1969. The quality of the 1969 crop was also poor because of the heavy rains.

However, more importantly, gross sales for cotton were lower because of the decrease in price. A bale of cotton sold for \$162 in Mississippi in 1964 as compared with \$102 per bale in 1969. This reduction of price is undoubtedly the largest contributing factor to the change of the modes of agriculture in Bolivar and Washington Counties, including the reduction in the number of small farms and the number of tenant farmers.

Payments from government farm programs also figure prominently in the agricultural income for Bolivar and Washington Counties. Table IV-D-33 lists Agricultural Stabilization and Conservation Service (ASCS) excluding monies received for price support loans for Bolivar and Washington Counties for the calendar year of 1971. As seen in Table IV-D-33, total payments for Bolivar County in 1971 were \$9,932,305, and payments to Washington County farmers amounted to \$9,157,384. In Bolivar County 46.7 percent of the total payments received or \$4,640,896 were distributed in lots of \$30,000 or more. These payments were received by 9.5 percent of the total payees or 110 for operators. In Washington County, 62.5 percent or \$5,723,268 of the total ASCS payments were distributed in lots of \$30,000 or more. These payments were received by 18.6 percent (151 total operators) of the payees in Washington County.

In summary, Agriculture in Bolivar and Washington Counties underwent a decline in prominence, especially from an economic standpoint during the period from 1965 to 1970. The general trend has been a decline in the number of farms and an increase in the size of the farms. As a result of this trend, the number of black farm operators who generally operate the smaller or tenant farms has been rapidly decreasing.

TABLE IV-D-33  
AGRICULTURAL STABILIZATION AND CONSERVATION SERVICE FREQUENCY DISTRIBUTION OF ALL  
FARM PRODUCER PAYMENTS FOR CALENDAR YEAR 1971 FOR BOLIVAR AND WASHINGTON  
COUNTIES.

Bolivar					Washington				
Total all programs		Percent distribution	Total amount	Percent distribution	Total all programs		Percent distribution	Total amount	Percent distribution
Range of total payment	Number of payees				Range of total payment	Number of payees			
Dollars	Number	Percent	Dollars	Percent	Dollars	Number	Percent	Dollars	Percent
1.00	33	2.86	2,223	0.02	1.00	26	3.80	1,273	0.01
100.00	40	3.47	5,967	0.06	100.00	33	4.82	4,849	0.05
200.00	146	12.65	50,142	0.50	200.00	98	14.33	32,972	0.36
500.00	100	8.67	60,362	0.61	500.00	40	5.85	23,318	0.25
700.00	100	8.67	82,915	0.83	700.00	45	6.58	37,363	0.41
1,000.00	166	14.38	238,693	2.40	1,000.00	60	8.77	87,555	0.96
2,000.00	67	5.81	168,184	1.69	2,000.00	29	4.24	71,757	0.78
3,000.00	48	4.16	164,891	1.66	3,000.00	17	2.49	58,163	0.64
4,000.00	35	3.03	158,072	1.59	4,000.00	15	2.19	65,590	0.72
5,000.00	58	5.03	355,558	3.58	5,000.00	30	4.39	180,521	1.97
7,500.00	55	4.77	474,456	4.78	7,500.00	30	4.39	263,554	2.88
10,000.00	69	5.98	836,669	8.42	10,000.00	35	5.12	440,747	4.81
15,000.00	55	4.77	946,645	9.53	15,000.00	41	5.99	720,684	7.87
20,000.00	41	3.55	895,112	9.01	20,000.00	34	4.97	780,124	8.52
25,000.00	31	2.69	851,520	8.57	25,000.00	24	3.51	665,646	7.27
30,000.00	36	3.12	1,161,013	11.69	30,000.00	21	3.07	688,953	7.52
35,000.00	15	1.30	559,319	5.63	35,000.00	25	3.65	943,929	10.31
40,000.00	16	1.39	679,331	6.84	40,000.00	20	2.92	867,897	9.48
45,000.00	15	1.30	704,347	7.09	45,000.00	14	2.05	678,707	7.41
50,000.00	17	1.47	900,871	9.07	50,000.00	26	3.80	1,366,281	14.92
55,000.00	1	0.09	55,000	0.55	55,000.00	3	0.44	165,000	1.80
55,000.01	10	0.84	581,015	5.88	55,000.01	18	2.63	1,012,501	11.06
100,000.00					100,000.00				
250,000.00					250,000.00				
500,000.00					500,000.00				
1,000,000.00					1,000,000.00				
and over					and over				
Total	1,154	100.00	9,932,305	100.00	Total	684	100.00	9,157,384	100.00

\*This does not include price support loans for calendar year 1971.

SOURCE: Agriculture and Conservation Service, United States Department of Agriculture

## Tax Data

Data on State Tax revenue by county is available from the Mississippi State Tax Commission Service Bulletin for 1970 and 1971. These tax data are available separately for sale tax, corporate income and franchise tax, and personal income tax.

Total tax from these sources for Bolivar and Washington counties for 1970 and 1971 are presented in table IV-D-34. The proportions of these totals contributed by each of the components are presented in Figure IV-D-3. Gross sales have been declining in both Bolivar and Washington Counties; correspondingly the corporation tax has been declining in both places, see Table IV-D-35.

Overall revenues for 1970 and 1971 for these two counties are shown in Table IV-D-36, revenues increasing by about 8 percent in each case.

### Personal Income Tax

County level data on personal income tax and taxpayers is presented together with total population data for 1970 and 1971 in table IV-D-37.

In Mississippi, income to unrelated individuals below \$4,000 is not taxable nor is family income below \$6,500. The number of taxpayers per 1,000 total population can therefore serve as a crude level of living index. Increases in the number of taxpayers per 1,000 total population can serve to indicate an improvement in the level of living.

Some cautions regarding such an index are in order. Even if the numerator data (total tax, number of taxpayers) are accurate, denominator data (total population) must be estimated between census years. These estimates are subject to considerable error.

In table IV-D-36, 1971 population estimates were derived by linear extrapolation from 1969-1970 estimates prepared by the University of Mississippi. The 1971 estimates continue a short term trend of declining population indicated by the university estimates.

Also the effects of inflation have not been controlled in this initial analysis and may be considerable. These cautions should be kept in mind when weighing the value of the following observations.

Between 1970 and 1971 taxpayers per 1,000 total population have increased from 89.2 to 96.2 in Bolivar county and from 123.1 to 138.6 in Washington county. Tax per person has increased from \$14.48 to \$15.32 in Bolivar county and from \$18.52 to \$23.48 for Washington county. Tax per tax payer has decreased from \$162.37 to \$159.21 for Bolivar county but has increased from \$150.42 to \$169.42 for Washington county.

Even apart from the cautions, these ratios are of little use over so short a span of time. They serve as important bench marks for the future, however.

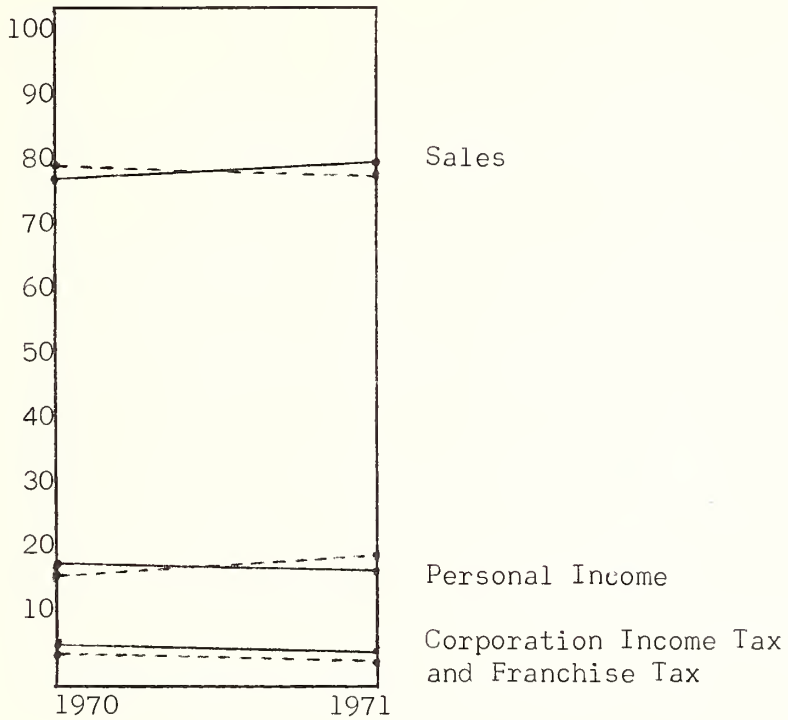
### Indicator to Monitor

The proportion of total sales accounted for by food and beverage sales increased substantially in a short period of time in Bolivar and Washington County. See Table IV-D-38. Inflation and increasing food costs are undoubtedly influential to this increase.

FIGURE IV-D-3

Components of Total Tax Revenue for Bolivar and Washington Counties 1970 & 1971

% of total  
tax revenue



Bolivar \_\_\_\_\_

Washington ----

TABLE IV-D-34

Total Tax From Various Sources for Bolivar and Washington Counties for  
1970 and 1971.

	Bolivar County	
	1970	1971
Sales Tax	\$3,325,975	3,654,697
Corporation	155,896	152,825
Franchise Tax	57,786	61,053
Personal Income Tax	715,419	707,542
<hr/>		
	Washington County	
	1970	1971
Sales Tax	\$6,502,202	6,950,567
Corporation	262,199	243,961
Franchise Tax	113,646	124,768
Personal Income Tax	1,307,418	1,550,319
<hr/>		

Source: Mississippi State Tax Commission Service Bulletin



TABLE IV-D-35

GROSS SALES PER CAPITA  
BOLIVAR AND WASHINGTON COUNTIES

1970-1971

	Sales Per Capita		Percent Change
	1970	1971	
Bolivar County			
Alligator	\$2011	\$2121	- 5.5
Benoit	1522	1321	-13.2
Beulah	4759	3970	-16.6
Boyle	974	1021	+ 4.8
Cleveland	1648	1668	+ 1.2
Duncan	4534	3908	-13.8
Gunnison	2047	1634	-20.2
Merigold	1465	1495	+ 2.0
Mound Bayon	2052	1296	-36.8
Pace	621	564	- 9.2
Rosedale	722	704	- 2.5
Shaw	1513	1520	+ 0.5
Shelby	3231	3535	+ 9.4
Winstonville	2796	2674	- 4.4
	85	108	+27.1
Washington County			
Arcola	3179	3108	- 2.2
Greenville	1708	1414	-17.2
Hollandale	4197	3303	-21.3
Leland	2310	2160	- 6.5
	2549	2111	-17.2

SOURCE: Mississippi State Tax Commission

TABLE IV-D-36

Revenue from Taxes for Bolivar and Washington Counties, 1970, 1971

	1970	1971	Increase 1970-1971	% Increase 1970-1971
Bolivar	\$4,255,076	\$4,576,117	\$351,041	8.24
Washington	8,185,465	8,869,615	684,150	8.35

---

Source: Mississippi State Tax Commission Service Bulletin

TABLE IV-D-37

Personal Income Tax: Taxpayers as Percent of Total Population and Tax Per Person for Bolivar and Washington Counties, 1970 and 1971.

Bolivar County	1970	1971
Total Population*	49,409	46,198
Tax Payers (personal income)	4,406	4,444
Number per 1,000 total population	89.2	96.2
Tax		
Total	\$715,419	\$707,542
Per Person	\$14.48	\$15.32
Per Taxpayer	\$162.37	\$159.21
Washington County		
Total Population*	70,581	66,019
Tax Payers	8,692	9,151
Number per 1,000 total population	123.1	138.6
Tax		
Total	\$1,307,418	\$1,550,319
Per Person	\$18.52	\$23.48
Per Taxpayer	\$150.42	\$169.42

---

\* 1971 population extrapolated from 1969 and 1970 estimates of the University of Mississippi projections.

Source: Mississippi State Tax Commission Service Bulletin

TABLE IV-D-38  
BASIC PURCHASES RATIOS\*  
FOR BOLIVAR AND WASHINGTON COUNTIES  
1970-1971

	1970	1971
Bolivar	21.10	24.29
Washington	16.85	21.67

SOURCE: Mississippi State Tax Commission Annual Report

\* Food and beverage sales divided by total sales.

One indicator of prosperity in an area is the degree to which expenditures for nonessential items encompasses a large proportion of total expenditures. A set of data extending over a broader span of time would provide a sounder basis for drawing conclusions. This expenditure indicator should be included among those to be reviewed in the Stage III effort in which data for years beyond 1970.

## Transportation

### Roads and Highways

Bolivar and Washington Counties are primarily serviced by two U.S. Highways and eleven State roads. The major north-south routes are U.S. 61 and Route 1, running respectively along the east and west sides of the two counties. The principal east-west road in Bolivar County is Route 8, connecting its two largest population centers (and county seats), Cleveland and Rosedale. Bolivar County is also served by five other east-west routes, connecting various places on the two north-south highways. These roads and highways are depicted on the map in Figure IV-D-4.

Washington County's principal route is U.S. Highway 82, connecting Greenville and Leland with major points east and west. The Highway 82 bridge across the Mississippi River into southern Arkansas is one of the Delta area's few means of access to western points, with a bridge 60 miles south of Greenville at Vicksburg (ingress to Louisiana), and another 132 miles to the north across from Helena, Arkansas in the northern part of the State.

Highway 61 links Washington's second-, third-, and fourth-largest towns, while 3 east-west routes (in addition to U.S. 82) join places on opposite sides of the county.

All of the roads and highways depicted in Figure IV-D-4 have paved surfaces. Most are two-lane roadways, with stretches of widened pavement or divided roadway at major sites of traffic volume. County roads (other than State and Federal routes), except in private residential areas and urban business centers, are for the most part unpaved, but generally kept in good condition by county maintenance crews.

### Motor Vehicle Registrations

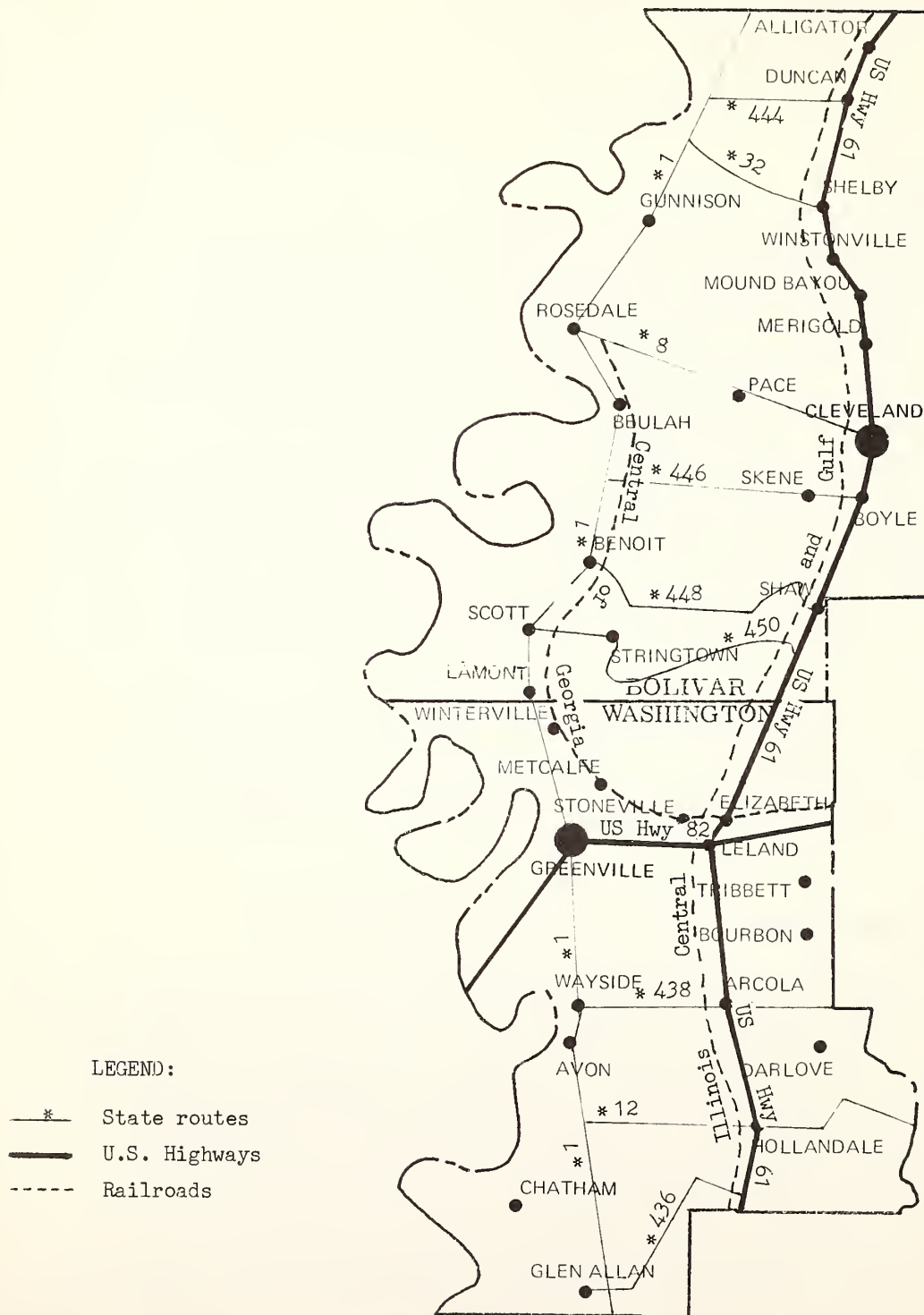
Delta area residents, due principally to lack of economic concentrations in employment and trade, are largely dependent upon automobiles for basic transportation. This conclusion is borne out by the data in accompanying Table 1, showing total motor vehicle registrations and passenger car registrations.

In relation to total registrations, passenger car registrations have increased markedly from 64 percent in 1965 to 82 percent in 1970 in Bolivar County, and from 73 to 85 percent in Washington County over the same time period. Both counties showed a steady increase in number of registrations from 1965 through 1969, with slight decreases in the Census year.

Well over 300 persons of every 1000 in Bolivar County have a motor vehicle of some sort (passenger auto, schoolbus, trailer, motorcycle, light or heavy truck), while around 400 of each 1000 of their neighbors in Washington County enjoy the use of such vehicles. When concentrating on the driving

FIGURE IV-D-4

ROADS AND HIGHWAYS, 1973  
BOLIVAR AND WASHINGTON COUNTIES





population (15 years of age and above), we find that over half of Bolivar driving-age persons were attributed with a motor vehicle of some sort, and almost 70 percent of their counterparts in Washington County.

Trends in registrations, shown in Figure IV-D-5, indicate that total registrations have been on the decline over the six-year period, while passenger car registrations have moved upward. In 1970, however, this tendency appeared to be leveling off. These long-run indications may be linked to urbanization in the two counties, to improved financial status, or to increased labor mobility, among other social and economic factors.

Passenger car registrations, also noted in Table IV-D-39 and in the first graph, have increased steadily in relation to population changes. Number of registrations per 1000 Bolivar County population has marched steadily forward over the six years studied, from 213 per 1000 in 1965 to 282 per 1000 in 1970. The numbers for driving-age population in Bolivar have advanced as well, from 373 in 1965 to 442 in 1970.

In Washington County, the gross population rates have moved from 288 in the first study year to 345 six years later; and the population of eligible drivers has experienced a greater availability of passenger autos as well, from 488 in 1965 to 537 in 1970. Clearly, in both counties, the automobile is fast dominating registrations of motor vehicles, with trucks and other traditional rural means of transportation becoming less prominent.

#### Farm Use of Motor Transportation

Based on data compiled in the 1969 Census of Agriculture, and presented in Table IV-D-40, farmers in both counties averaged about one and one-half automobiles per farm, and over two motortrucks, including pickups. These figures were down from the 1964 Census, which showed a larger number of farms and vehicles as well.

An interesting sidelight in the most recent agriculture census was the data on model year of the motor vehicles. Over three-quarters of the farms in both counties in 1969 reported automobiles newer than 1964 vintage (four years or less at that time), while only 30 percent of farms reported owning earlier models.

Older year models were more popular than the newer vehicles in the figures from motortrucks, with a few percentage points higher on those trucks of 1964 model or earlier, and about the same from the more recent models. Of course, the data indicated that many farms had both recent- and early-model vehicles on hand. A full description of agriculture characteristics of the two-county area is presented elsewhere in this chapter.

#### Traffic Volume

Daily traffic volume on each of the State and Federal roadways, identified by the nearest city or town in Bolivar and Washington counties, has been obtained for the years 1968 and 1971 at checkpoints monitored by the State Highway Department. These figures are presented for comparison in Table IV-D-41.

Bolivar County's road system, as made obvious by Table IV-D-41, has experienced, with a few exceptions, a great boom in vehicular traffic on almost every route, and particularly the two major north-south highways. On the other hand, traffic volume at major points in Washington County

TABLE IV-D-39  
Motor Vehicle Registrations  
Bolivar and Washington Counties, 1965-1970

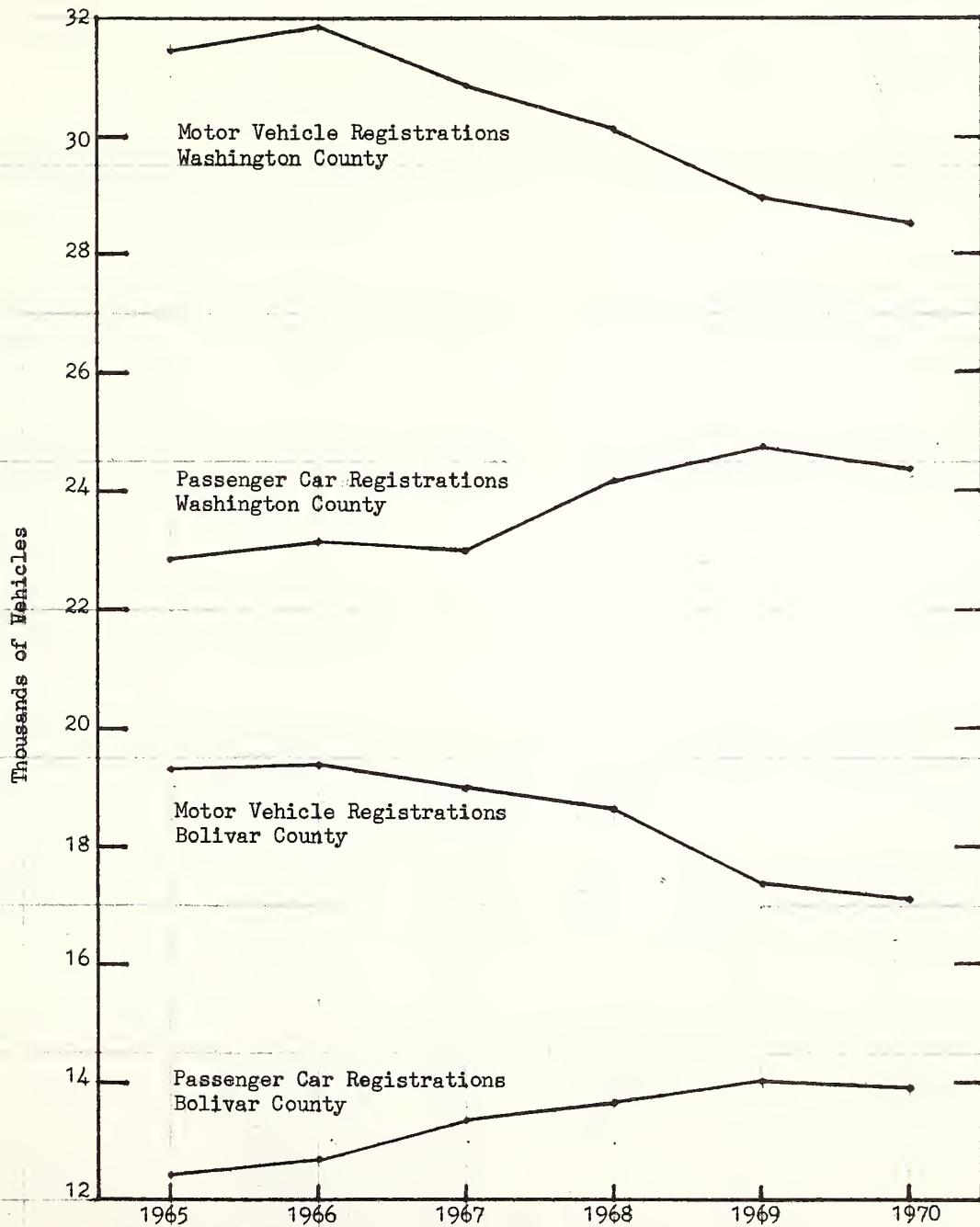
Passenger Car Registrations	1965	1966	1967	1968	1969	1970
Bolivar County	12433	12726	13319	13718	14021	13930
Rates per 1000 - all ages	213	216	232	251	266	282
- 15 and over	373	370	384	410	433	442
Washington County	22820	23121	22991	24206	24781	24343
Rates per 1000 - all ages	288	290	294	316	330	345
- 15 and over	488	486	505	520	533	537
Motor Vehicle Registrations*						
Bolivar County	19283	19368	19033	18610	17340	17072
Rates per 1000 - all ages	331	328	331	341	330	346
- 15 and over	579	560	549	556	536	541
Washington County	31436	31785	30841	30148	28950	28513
Rates per 1000 - all ages	397	399	395	394	385	404
- 15 and over	673	667	678	648	622	629

Includes schoolbuses, trailers, motorcycles, light and heavy trailers

Source: State Motor Vehicle Comptroller

FIGURE IV-D-5

TRENDS IN MOTOR VEHICLE REGISTRATIONS  
BOLIVAR AND WASHINGTON COUNTIES, 1965-1970



(SOURCE: Mississippi State Motor Vehicle Comptroller

TABLE IV-D-40  
AUTOMOBILES AND MOTOR TRUCKS MAINTAINED ON FARMS  
BOLIVAR AND WASHINGTON COUNTIES, 1964, 1969

	1969			1964										
	Farms re- porting	Number	Vehicles per farm	Equipment manufactured								Farms re- porting	Number	Vehicles per farm
				1965 or later			1964 or earlier							
	Farms re- porting	Percent of total	Number	Percent of total	Farms re- porting	Percent of total	Number	Percent of total	Farms re- porting	Percent of total	Number	Percent of total		
<u>Bolivar county</u>														
Automobiles	720		1,036		546	76	771	74	225	31	265	26		
Motor trucks in- cluding pickups	795		1,639		558	70	1,007	61	418	53	632	39		
<u>Washington county</u>														
Automobiles	457		721		352	77	537	74	144	32	184	26		
Motor trucks in- cluding pickups	523		1,226		372	71	722	59	298	57	504	41		

Source: U. S. Census of Agriculture, 1969, Vol. 1, Part 33, Section 2, pp. 50, 610.

TABLE IV-D-41  
DAILY TRAFFIC VOLUME  
BOLIVAR AND WASHINGTON COUNTIES  
1968, 1971

Route direction name and approximate location of checkpoint	1968	1971	Percent
<u>North-South Routes</u>			
<u>U.S. Highway 61</u>			
<u>Bolivar county</u>			
Alligator	2,550	2,760	8.2
Duncan	2,580	3,470	34.5
Shelby	3,180	3,240	1.9
Mound Bayou	3,590	4,420	23.1
Merigold	4,500	4,700	4.4
Cleveland	7,740	9,710	25.5
Boyle	4,850	7,730	59.4
Shaw	3,480	4,840	39.7
<u>Washington county</u>			
Leland	4,530	3,130	-30.9
Arcola	1,720	1,930	12.2
Hollandale	2,320	1,530	-34.1
<u>Mississippi Route 1</u>			
<u>Bolivar county</u>			
Perthshire	630	1,050	66.7
Rosedale	1,970	1,900	-3.6
Scott	1,110	1,340	20.7
<u>Washington county</u>			
Greenville	2,410	2,750	14.1
Wayside	2,730	2,960	8.4
James	1,270	1,480	16.5

TABLE IV-D-41  
DAILY TRAFFIC VOLUME  
BOLIVAR AND WASHINGTON COUNTIES  
1968-1971--Cont.

Route direction name and approximate location of checkpoint	1968	1970	Percent
<u>East-West Routes</u>			
<u>Bolivar county</u>			
Route 444 (Duncan - Route 1)	150	370	146.7
Route 32 (Shelby - Perthshire)	690	950	37.7
Route 8 (Cleveland - Rosedale)	1,630	1,540	-5.5
Route 446 (Boyle - Route 1)	380	570	50.0
Route 448 (Shaw - Benoit)	280	230	-17.9
Route 450 (U.S. 61 - Scott)	470	320	-31.9
<u>Washington county</u>			
<u>U.S. Highway 82</u>			
Leland	4,270	4,470	4.7
Greenville	9,520	7,870	-17.3
Route 438 (Arcola - Wayside)	660	650	-1.5
12 (Hollandale - James)	650	450	-30.8
436 (U.S. 61 - Route 1)	340	410	20.6

Source: Traffic and Planning Division, Mississippi State Highway  
Department



showed significant decreases, especially of less popular routes, over the three-year interval, a factor that may be tied to population declines in its major cities, and perhaps to the growing urbanization of its neighbor, Bolivar County.

Traffic volume is necessarily heaviest at the junctions of major arteries. For example, at the intersection of Highways 61 and 82 near Leland in Washington County, State Highway Department researchers clocked some 7770 cars per day in 1968. By 1971, this had increased to almost 7900 vehicles in a single day's time.

The points of major traffic volume were, of course, to be found near the two major cities, Cleveland (Bolivar) and Greenville (Washington). At a checkpoint north of Cleveland, traffic increased from 7740 per day in 1968 to 9710 by 1971. At Greenville, growth at an eastside checkpoint on U.S. 82 also was notable, although not as dramatic as the Cleveland increase.

Most traffic volume, as would be expected, was contained on the two main thoroughfares; but many connecting routes showed substantial increases as well. For example, on Route 446 between Boyle and Benoit, the number of cars observed during one day soared from 380 in 1968 to 570 in 1971, an increase of 50 percent over a 3-year period. With increasing passenger car registrations, we might reasonably expect the trend for greater use of the road system to continue to grow.

### Health Transportation

The Delta Community Hospital and Health/Care Center at Mound Bayou in Bolivar County maintains a fleet of some 30 or more GSA (Government Services Administration) vehicles to provide transportation for patients without such means to visit the complex for medical consultation, and for other purposes, such as private visits, transportation to other health and social services (welfare offices, etc.) as the needs arise. The major hospitals in each county are associated with ambulance or rescue squad service, and police and fire companies provide emergency transportation as necessary. In addition, the county health departments have a limited number of vehicles used to trace diseases (e.g., venereal diseases, tuberculosis), and for the conducting of weekly and monthly clinic sessions at various locations throughout the counties.

### Other Modes of Transportation

The Greenville Municipal Airport is a commercial airport located just north of Greenville off Route 1. It is served by Southern Airways flights several times daily, and also accommodates charter service and private air travel. The Delta area has no regional center, but a proposal has been developed by the Mississippi Research and Development Center in Jackson posing the exploitation of Greenville as such a center.\*

According to the study directed by Walter M. Merritt and Donald M. Easley, Greenville is the population and economic center of the central delta area, and therefore the most logical choice for expansion of air travel facilities. Construction of a new air terminal and control tower is

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\*See A Survey of Air Transportation Needs in the Central Mississippi Delta, December, 1970.

currently underway at the site on the old Greenville Air Force Base grounds.

Cleveland has a small airstrip as well, but accommodates only small aircraft, private and charter planes, cropdusters and the like. Similar facilities are available in Leland and other localities.

One major railroad, the Illinois Central-Gulf Railroad operates a line along the path of the Mississippi River on the western border of Bolivar County and another that closely follows the path of U.S. Highway 61. The railroad currently runs mostly freight trains from the Great Lakes to New Orleans. Thus, the railroad seems to have little impact on the transportation needs of the people of the Delta.

No mass transit systems are in operation or planned for the two-county area, although national bus service (Greyhound and Continental Trailways) operate regular routes along the U.S. highways, and do provide intermittent local transportation between towns and cities located along the established routes.

Transportation data are generally recognized as a valid indicator of industrial urban development potential as well as changes in socio-economic status in a particular area. The data presented in this section, when considered with other economic indicators in this chapter, should help to substantiate the promise of real economic and social development in the Delta region, and particularly in Bolivar and Washington Counties.

### Housing

For all places within the two-county area (with the exception of Greenville in Washington County), both number and percentage of substandard residential units increased between the 1960 U.S. Census of Population and selected dates (1968 or 1969) late in the decade. The data, as presented in the accompanying Table 1, was obtained by the Mississippi Research and Development Center for a special proposal.<sup>1</sup>

When considered with the general population decline over this period, these data seem to indicate the absence of new housing starts, and failure to maintain or rehabilitate existing structures at a standard level of livability. Chapter II of this report contains data from the 1970 U.S. Census of Housing that provides interesting supplemental information concerning occupied housing units for Bolivar and Washington Counties, and major places within. The 1970 Census characteristics detail plumbing facilities, units per structure, persons per household, and differentiate owner- from renter-occupied units, as well as other statistics.

Table IV-D-42 shows that in Bolivar County, total residential dwelling units increased in Cleveland, Mound Bayou and Shelby, although percent of substandard units were higher in 1968-1969 than in the last Census year. Small gains in standard units were notable in Cleveland, Mound Bayou and Shelby; but Rosedale and Shaw showed significant declines in number of standard units. These decreases were unexplained in the report (already cited), but possibly are the result of either a revised code of housing standards, or a more intensive effort on the part of authorities to adequately reflect true housing conditions.

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1. See A Preliminary Development Proposal for the South Delta Area of Mississippi, Mississippi Research and Development Center, Jackson, Mississippi.

CONDITION OF RESIDENTIAL DWELLING UNITS,  
SELECTED SOUTH DELTA COMMUNITIES  
1960 AND SELECTED DATES

	1960					Selected Dates			Date of Survey
	Total Units	Standard Units	Sub-Standard Units	Percent Sub-Standard Units	Total Units	Standard Units	Sub-Standard Units	Percent Sub-Standard Units	
Bolivar County	2,775	1,942	833	30.1	3,206	2,065	1,141	35.6	1968
Cleveland	407	205	202	49.6	622	242	380	61.1	1969
Mound Bayou	794	585	209	26.3	775	266	509	65.7	1969
Rosedale	717	479	238	33.2	697	299	398	57.1	1968
Shaw	743	364	379	51.0	781	365	416	53.2	1969
Shelby									
Washington County	12,324	7,014	5,310	43.1	12,106	8,038	1,068	33.6	1969
Greenville	801	325	476	59.4	1,013	339	674	66.5	1969
Hollandale	1,882	1,470	412	21.9	1,935	859	1,076	55.6	1969
Iceland									

SOURCE: Preliminary development program for the South Delta area of Mississippi, Mississippi Research and Development Center

Of the three major places in Washington County, only Greenville, the largest city, showed a decrease in total housing units, while Leland and Hollandale exhibited modest gains. Percentage of substandard units fell almost 10 points in Greenville, but advanced in the two other county towns, most significantly in Leland, registering 21.9 percent substandard units in 1960, and a substantial 55.6 percent in 1969 that were not up to recognized standards.

The data in this table seem to reflect an overall deterioration of residential dwelling units in the two-county area. The figures would lead us to believe that less people are establishing residences in either county (supported by reported population declines in the 1970 Census), and that those who have established or taken over residential dwellings are of lower socio-economic status and may not be able to afford upkeep and/or improvements that would maintain or upgrade their housing to standard levels.



CHAPTER V  
INTERRELATION OF FINDINGS

PREVALENCE OF ECONOMIC DISTRESS

Bolivar County and to a lesser extent, Washington County, typify in many respects what has happened and is continuing to happen in rural areas all over our country. Poverty and general economic distress prevail in many rural areas. However, historically and currently, interregional differences in per capita real incomes have been the lowest in the South.

In 1970 in Bolivar and Washington Counties, the proportion of families below the poverty level was 44 percent and 34 percent, respectively. For black families which make up the majority of families in Bolivar County, and almost half of Washington County families, economic conditions are very severe. Nearly four out of five black families (79 percent) in Bolivar County had incomes at, below, or barely above the poverty level (125 percent of the poverty level). In Washington County, seven of ten black families fell in the same categories.

The declines in population and in agricultural employment are often synonymous with the rapid technological transformation of agricultural activity, wherein mechanization and increased productivity per farm have accelerated the consolidation of small farms into larger ones. Since much farm employment is seasonal, this set of forces and conditions has contributed to underemployment and low income. In Bolivar County, starting from a larger base number of farms than Washington County, 35 percent fewer farms were in operation in 1969 (1,070 farms) than in 1964 (1,657 farms). Eighteen percent fewer farms were operating in 1969 in Washington County than in 1964, declining from 795 to 653 farms. The average size of farms increased in both counties. A 59 percent increase was reported in Bolivar County in 1969, with acreages increasing from 290 acres in 1964 to 460 acres in 1969. The average size of farms in Washington County increased from 484 acres in 1964 to 581 acres in 1969 (a 20 percent increase).

There was a large decrease in the number of farms operated by blacks. between 1964 and 1969. This was true of black farm owners, tenants and share-croppers.

In Bolivar County, displacement from the farm took one of two forms: (1) movement to an urbanized place within the County, or (2) movement out of the County. The proportion of urbanized population in Bolivar County grew markedly from 19 percent in 1960 to 43 percent in 1970. The overall population in Bolivar County declines 9 percent in the 1960's. In Washington County, the proportion of urbanized population reached a plateau by 1970 showing only a two percentage point increase in a decade (from 67 to 69 percent). The loss in total population reached 10 percent.

During this time period, people migrating out of the area tended to be young, better educated, and more adaptable, leaving behind a concentration of older, less skilled people. This out migration had the effect of depleting the economic potential and the purchasing power of the area.

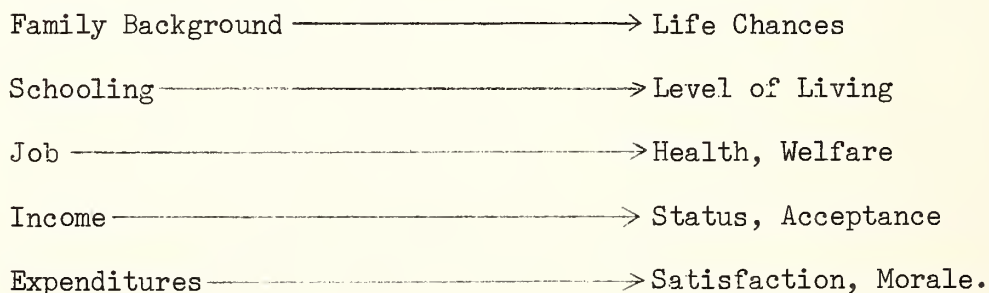
That is essentially the situation in the two counties under study. Bolivar County hit its peak in population size in the 1930's and 1940's, but has been declining since then; Washington County reached its peak from 1950 to 1960, declining in the 1960's. As can be seen by population data shown earlier, both counties are over-represented by a dependent population (e.g., under 18 or over 65), and under-represented by people in productive years.

The decline in farm employment was dramatic in Bolivar County in the 1965-1970 period, falling from 41 percent of total employment to 28 percent. In Washington County, with a smaller agricultural sector to begin with, farm employment relative to total fell from 16 percent to 13 percent.

Personal income in Bolivar County was approximately \$1,700 per capita in 1969, but is growing less rapidly than in Mississippi as a whole. In Washington County, personal income per capita in 1969 is above that for the State average (approximately \$2,400 versus \$2,230) and is continuing to grow at the same rate as is the State. This indicates a deterioration of income status for Bolivar County relative to Washington County and the State.

#### THE SOCIO-ECONOMIC LIFE CYCLE

Otis Dudley Duncan proposed the following schematic representation considering relationships among indicators for an individual or cohort of individuals:



In connection with this scheme, Duncan indicated that existing for the poor (and the black poor in particular) is (1) a prevalence of unstable family situations and dependence on meager family resources; (2) attainment of less than average amounts of education; (3) employment in lower-level jobs; (4) low income; (5) an inefficient pattern of expenditures; and (6) in consequence, inferior life chances, low levels of living and welfare, and impaired satisfaction. "In the chain of causation that the diagram seeks to suggest, each of these handicaps operates to set up the handicap at later stages:

Schooling is terminated early, partly because family support is inadequate;



- . Job opportunities are inferior partly because educational preparation is not good;
- . Low income is partly due to poor job opportunities;
- . Expenditures are inefficient and insufficient partly because of low income;
- . (The poor) get less out of life partly because of cumulative inadequacies at each stage of the life cycle."<sup>1</sup>

Duncan goes on to say that this conceptual paradigm has an additional set of handicaps for blacks associated with racial discrimination.

This paradigm is useful in providing a tentative framework from which to inspect the findings of this present study. Below we list and briefly describe some major findings under specific subject matter areas. (Other findings are shown in the social indicators matrices presented at the end of the Chapter.)

1. Family disorganization. In both counties over 25 percent of non-white families in 1970 were matriarchal (headed by females). Births to unwed mothers (also a non-white phenomenon) were higher in Bolivar County but also a major factor in Washington County. Births to unwed mothers have increased significantly between 1965 and 1969 in both counties. Our findings indicate that births to unwed mothers are usually not a one-time thing -- more than  $\frac{1}{2}$  of the unwed mothers had previous deliveries. Other data assembled on divorce indicate that among non-white couples in both counties a long period of disorganization in marriage precedes divorce. In recent years, the average length of marriage before divorce for non-whites has been narrowing. As of 1970, however, a wide gap between whites and non-whites continued to exist.

2. Education. Blacks in both counties tended in 1970 to have about four fewer years of schooling than whites. In addition, the statistics indicate that blacks are the predominant racial group in the public school system. A number of "academies" have been established in Bolivar and Washington Counties with almost exclusive white student bodies. There is some indication that vocational schools devoted to developing trade and industrial skills have been on the increase,

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1. Duncan, O.D., "Discrimination Against Negroes," Annals of the American Academy of Political and Social Science, May 1967, pp. 87-88.

while vocational schools devoted to agricultural pursuits have been on the decline. The one college in the area (Delta State College in Cleveland) draws the majority of its students from Bolivar and Washington Counties. Lastly, the statistics indicate that the Mound Bayou school district is experiencing increasing enrollment, higher teacher-pupil ratios and high instructional cost. This would indicate some stress on that school system.

3. Employment and income. Unemployment for non-whites in the two counties tended to be higher than for whites. Also, job levels and incomes were low for most occupational categories in both counties, but generally were lower for non-whites. Significant shifts occurred away from agricultural employment toward industrial employment. Some diversification in both the agricultural and industrial sector of the Bolivar County economy was in evidence and duly noted in Chapter IV. Seventy to eighty percent of non-white families had incomes below the poverty level.

4. Health status. Births to unwed mothers were associated with the high risk pregnancy syndrome (e.g., low birth-weight babies). In addition, death rates at all ages (particularly young ages) and infant mortality rates were significantly higher among non-whites than whites. Venereal disease rates among non-whites in the two counties were higher than among non-whites in Mississippi as a whole. In addition, tuberculosis rates (although decreasing with time) tended to be higher among non-whites.

5. Delivery of health services. Indications show that the Washington County Health Department has been relatively more successful in delivering health services than the Bolivar County Health Department. Many of the Bolivar County Health Department services started to wane when the Mound Bayou facilities were opened in 1967 and 1968. Additionally, Washington County appeared to have better facilities (e.g., bed capacity) in terms of nursing homes and hospitals. Availability of health manpower (physicians, dentists and nurses) was also better in Washington County than in Bolivar County. In general, nursing home facilities in both counties were located in the larger places, indicating to some extent the unavailability of such facilities to populations located in remote rural areas. The rather significant decline in mid-wifery in Bolivar County between 1965 and 1969 indicates that more hospital obstetrical services were made available to people from remote rural areas.

6. Welfare and Medicaid. Some evidence suggests that utilization of welfare resources in Bolivar County has been increasing over time. Although Washington County has a larger absolute number of families in the poverty category than Bolivar County, total absolute expenditures in both counties are similar. Moreover, the average stipend per case is greater in Bolivar County, and the number of cases per 1,000 population in the smaller places within Bolivar County appears to indicate a high ratio of welfare coverage.

With respect to Medicaid, definite conclusions are difficult to make, since the program started in the second quarter of the 1971 fiscal year. However, the few statistics available suggest that the average benefits for whites are somewhat higher than for non-whites. The social indicator matrices presented at the end of this chapter further summarize our findings. The implications of the total study show Bolivar County and, to a lesser extent, Washington County, to be in a state of flux. Much social and economic distress and many manifestations of poor health status are evident. Further exploration of these problems, and other that arise will be made in Stage III.





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